The Builder

A JOURNAL FOR THE

Architect, Engineer, Operative & Artist.

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ARCHITECTS' BENEVOLENT SOCIETY.

PATRONS.

Sir Robert Smirke. A. J. B. Beresford Hope, Esq. M.P.

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The List of Subscribers and Annual Report may be obtained of the Hon. Secretary. Subscriptions will be received by WILLIAM TITE, Esq. St. Helen's-place, the Treasurer; or by Mr. GOULD, the Collector, 52, Great Ormond-street, W.C.

J. TURNER, Hon. Secretary, 15, Wilton-street.

BUILDERS' BENEVOLENT INSTITUTION.

—An Election of Four Pensioners (two males and two Females) was held on the 27th inst. at the LONDON TAVERN, GEORGE PLUCKNETT, Esq. President, in the chair.

SUCCESSFUL CANDIDATES.

Thomas Barry	2413	Mary A. Farnell	2067
John Brothill	2364	Julia Garrod	1553

THE OTHERS WERE:—

W. Palmer	980	W. Standfast	56
W. Taylor	759	J. Noble	473
T. Hammond	603	Mary A. Chirnside	118
A. Turner	1599	Amelia Smith	1453
R. P. Day	489	Sarah Wright	383
T. Lawrence	1080		

May 31, 1861. A. G. HARRIS, Secretary.

SOCIETY of PAINTERS in WATER COLOURS.

—The FIFTY-SEVENTH ANNUAL EXHIBITION is NOW OPEN at the Gallery, 5, Pall-mall East (Close to the National Gallery), from NINE till DUSK. Admittance, 1s. Catalogue, 6d.

JOSEPH J. JENKINS, Secretary.

THE NEW SOCIETY of PAINTERS in WATER-COLOURS.

— THE TWENTY-SEVENTH ANNUAL EXHIBITION IS NOW OPEN. Gallery, 53, Pall-mall West. Admission, 1s.: Catalogues, 6d.; Season Tickets, 5s. JAMES FAHEY.

NOW OPEN.—HISTORY of WATER-COLOUR PAINTING.

—An EXHIBITION of PAINTINGS from Private Collections, illustrating the History of the Art, at the Society of Arts, John-street, Adelphi. Daily, from TEN A.M. till SIX P.M.—Admission, One Shilling. Catalogues, Sixpence.

PAINTERS' COMPANY.—The SECOND ANNUAL EXHIBITION of WORKS of DECORATIVE ART

commences at the Hall of the Company, No. 9, Little Trinity-lane, Cannon-street West, City, on SATURDAY, the 1st of JUNE, and continues until the 30th. Admission gratis from ELEVEN to FOUR daily.—By order of the Court, P. N. TOMLINS, Clerk.

GERMAN ACADEMY of ART, Egyptian Hall, Piccadilly.

—The FIRST ANNUAL EXHIBITION of PAINTINGS and WORKS of ART, by the most eminent living German masters, selected from the Royal Academies at Berlin, Dusseldorf, and Königsberg, WILL OPEN on MONDAY NEXT, JUNE 3.—Admission One Shilling.

THE ARCHITECTURAL MUSEUM,

SOUTH KENSINGTON MUSEUM, W.

Patron, H. R. H. THE PRINCE CONSORT.

PRIZES to ARTIST WORKMEN are now offered for—

STONE CARVING	£10	10	0	and £5	5 0
Also	5	5	0	,,	3 3 0
MODELLING	3	3	0	,,	2 2 0
WOOD CARVING	10	10	0	,,	5 5 0
METAL WORK	10	10	0	,,	6 6 0
Also	10	10	0	,,	5 5 0
PAINTED GLASS	..	..	..		5 5 0
COLOURED DECORATION	5	5	0	,,	3 3 0

PORTIONS of any ACTUAL WORK in progress, Prizes according to merit. EXTRA PRIZES and Ten valuable Illustrated Books will also be added; and all deserving specimens will be sent to the International Exhibition of 1862.—For full particulars, apply, by letter, to the Hon. Secretary, at 13, Stratford-place, W.

A. J. B. BERESFORD HOPE, President.
GEO. GILBERT SCOTT, Treasurer.
JOSEPH CLARKE, Hon. Secretary.

ARCHITECTURAL EXHIBITION,

9, Conduit-street, Regent-street.—Patron, H. R. H. the Prince Consort.—Now open from NINE till SIX.—Admission, 1s.; Season Tickets, Half-a-Crown.—Lecture for TUESDAY, JUNE 4th, at EIGHT o'clock, by R. P. PULLAN, Esq. "Church Architecture of the 19th Century."

JAMES FERGUSSON, } Hon. Secretaries.
JAMES EDMESTON, }

CHICHESTER CATHEDRAL RESTORATION.

LONDON COMMITTEE:—

Lord Henry G. Lennox, M.P. Chairman.	The Master of Jesus College, Cambridge.
The Lord Bishop of Oxford.	Vice-Chancellor Sir W. Page Wood.
The Lord Bishop of Moray and Ross.	A. J. B. Beresford-Hope, Esq.
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The Master of Trinity College, Cambridge.	The Rev. Philip Freeman.
	T. M. Weguelin, Esq.
	J. H. Parker, Esq.
	R. E. E. Warburton, Esq.
	J. J. Johnson, Esq.

Contributions are earnestly requested, which may, at the option of the donor, be spread over a period of five years. Subscriptions in aid of this work will be received by Messrs. DRUMMONDS, Charing-cross; Messrs SMITH, PAYNE, & SMITH, Lombard-street; or, if sent by letter, may be addressed, "Lord Henry G. Leunox, M.P. 3, Cloisters, Westminster Abbey."

ECCLESIOLOGICAL SOCIETY. — The ANNUAL MEETING

will be held on THURSDAY, JUNE 13, at EIGHT o'clock p.m. in the Gallery of the Architectural Union Company, 9, Conduit-street, A. J. B. BERESFORD HOPE, Esq. President, in the chair. The subject for discussion will be "The Destructive Character of Modern French Restoration."—Visitors admitted on producing their cards

ANNUAL DINNER.—The present and

past Students of the Architects', Builders', Civil Engineers', and Machinists' Drawing-Classes will DINE at the CROWN INN at Broxbourne, on WEDNESDAY, the 12th of JUNE inst. Any gentleman not having received a Notice, and intending to be present, will please to communicate with Mr. T. J. HILL, at the Offices, 70, Old-street, City-road.

MEMORIAL to SIR CHARLES BARRY,

F.R.S. R.A. F.R.I.B.A.—The First List of Subscribers appeared in "The Builder" May 18, 1861; names to be inserted in the next should be forwarded at once to the Honorary Secretaries, M. DIGBY WYATT, V.P. R.I.B.A.; and CHARLES C. NELSON, F.R.I.B.A. No. 9, Conduit-street, Hanover-square.

Subscriptions to the "Barry Memorial" are received by Messrs. DRUMMOND, Bankers, Charing Cross.

SIR JOHN SOANE'S MUSEUM.—

Notice is hereby given, that in conformity with the Act of Parliament relating to the establishment of Sir John Soane's Museum, No. 13, Lincoln's-inn-fields, the Museum will be OPEN every THURSDAY and FRIDAY, during the Month of JUNE, from TEN o'clock, a.m. to FOUR o'clock p.m. for which cards of admission may be obtained at the Museum.

GEORGE HOBSON, Curator *pro tem.*

ARCHITECTURAL PHOTOGRAPHIC ASSOCIATION.

—A SPECIAL GENERAL MEETING of Subscribers will be held at 9, CONDUIT STREET, REGENT STREET, W. on FRIDAY, JUNE 7th, at FOUR o'clock, to consider the Position and Prospects of the Association.

WILLIAM LIGHTLY, Hon. Sec.

COMPETITIONS.

TO ARCHITECTS.—CARLISLE CORN MARKET.

—A PREMIUM of 20*l.* will be given for the best design, and 10*l.* for the second best design of a building for a Corn Market, to be erected on the selected site in Lowther-street. The plans to be accompanied with a detailed estimate of the cost, and to be sent in addressed to the City Treasurer, and marked "Plan for the Corn Market," but without the author's name, on or before the 24th day of JUNE next. A sealed envelope bearing a motto corresponding to that on the author's design, and containing the author's name, to be sent in with each plan. The selected plans to become the property of the Corporation. A lithographic plan and sections of the selected site, and a photograph of the adjoining buildings, may be had on application to the City Surveyor.

Carlisle, May 23, 1861.

CONTRACTS.

WAR DEPARTMENT CONTRACT.—

NOTICE to BUILDERS.—TENDERS are required for ERECTING a WING of proposed SOLDIERS' QUARTERS, GUARD-ROOM, and buildings connected therewith, at Fleetwood.

Parties desirous to Tender for the erection of these works, must leave their names at this office on or before the 10th JUNE, and pay the sum of ten shillings and sixpence for the bill of quantities, which will be forwarded to each party as soon as prepared by the Government surveyor.

The Secretary of State does not bind himself to accept the lowest or any Tender.

Royal Engineer Office, 225, Stretford-road, Manchester, May 29th, 1861.

THE Secretary of State in Council of India

will be prepared, at NOON, on THURSDAY, the 20th day of JUNE next, at the India Office, Victoria-street, Westminster, to open sealed TENDERS from persons desirous of PURCHASING the PREMISES generally known as the EAST-INDIA HOUSE, Leadenhall-street. Each Tender must be accompanied with the sum of 5,000*l.* and no cognizance will be taken of the Tender of any person who shall not have delivered his Tender and paid that sum into the hands of the Accountant General to the Council of India at the India Office, Victoria-street, Westminster, either on WEDNESDAY, the 19th day of JUNE next, between the hours of TEN a.m. and FOUR p.m. or upon the morning of THURSDAY, the 20th day of JUNE next, between the hours of TEN a.m. and NOON; after which last-named date and hour no Tenders and no money will be received.

The highest Tender will be accepted, provided that the amount shall exceed a reserve price determined upon by the Secretary of State, and placed under seal prior to the opening of any of the Tenders. A form of agreement has been prepared, which will have to be executed by the person whose Tender shall be declared accepted immediately upon any such declaration being made by the Secretary of State in Council of India, on pain of the absolute forfeiture of the sum the person whose Tender shall be so declared to be accepted shall have previously deposited.

Copies of the said agreement, with a plan for attachment thereto, together with copies of this advertisement, conditions of Tender, plans of each floor of the premises, and forms of Tender, have been priuted, and may be had, price 2s. 6d. on application to M. DIGBY WYATT, Esq. India Office, or at his Offices, No. 37, Tavistock-place, W.C.; at the Offices of the Solicitor to the India Office, 28, Austin Friars, E.C.; or of Mr. THOMAS FOX, No. 93, Bishopsgate-street Within.

The moneys deposited by all parties whose Tenders may not be accepted will be returned to them on application to the Accountant General to the Secretary of State in Council of India, at the India Office, on the 20th day of JUNE next, between the hour at which a final declaration may be made with respect to the Tenders received, and FOUR p.m.; or on the ensuing day between the hours of TEN a.m. and FOUR p.m.

The premises may be viewed between the 3rd and 20th days of JUNE next, by all persons provided with tickets, to be obtained as above.

India Office, May, 1861.

TO BUILDERS.—The Commissioners for

Public Baths and Washhouses in the Parish of St. Martin-in-the Fields give Notice, that they will meet at No. 18, Green-street, Leicester-square, on WEDNESDAY, the 5th JUNE, 1861, at Three o'clock, p.m., to receive TENDERS for the EXECUTION of certain WORKS, in making a new ENTRANCE to the BATHS in Orange-street, Leicester-square. The drawings, specifications, and conditions of Contract may be inspected and forms of Tender obtained on application to the Superintendent, at the Baths. The Tenders to be addressed to the Commissioners of Baths, endorsed "Tender for Works," and delivered sealed, to the Superintendent, at the Baths, on or before the 4th of JUNE, 1861. The builder whose Tender is accepted will be required to enter into a contract or bond, with two sureties, to be approved of by the Commissioners for the due performance of the works. Such Contract and Bond to be prepared by the Solicitor to the Commissioners, at the expense of the Contractor. The Commissioners do not bind themselves to accept the lowest or any Tender. J. DANGERFIELD, Clerk to the Commissioners.

WAR DEPARTMENT CONTRACT.—

NOTICE to BUILDERS.—TENDERS are required for RENEWING the SLATING and LEAD WORK of the ROOFS of the REAR RANGE of BUILDINGS, at the Royal Military Academy, on Woolwich Common.

Parties desirous to Tender for the execution of this Work, must leave their names at this Office, on or before the 8th day of JUNE, 1861, and pay the sum of 10*s.* 6d. for the bills of quantities, which will be forwarded, to each party as soon as prepared by the Government Surveyor.

The Secretary of State does not bind himself to accept the lowest or any Tender.

Royal Engineer Office, Woolwich, May 13, 1861.

TO BUILDERS and CONTRACTORS.—

Persons desirous of CONTRACTING for the WORKS to be done in the further RESTORATION and REPAIRS of Worcester Cathedral, may see the Drawings and Specification at the Offices of Mr. A. E. PERKINS, Architect, College-yard, Worcester, who will, on application, make arrangements for their using Plans and Specifications for the purpose of preparing Tenders, which must be free of expense, and delivered sealed to the Very Rev. the Dean of Worcester, at the Deanery, on the 21st JUNE. The Tenders will be opened on the 23rd of JUNE, in presence of such Contractors as may wish to attend. The Dean and Chapter do not bind themselves to accept the lowest Tender.

TO BUILDERS and CONTRACTORS.—

WANTED, TENDERS for the ERECTION of a SET of FARM BUILDINGS, on the Estate of the Right Hon. LORD BAGOT, of Blithford, near Abbot's Bromley, in the county of Stafford. Plans and specifications may be seen on application to T. PICKERING, Esq. Abbot's Bromley; or at the Offices of Messrs. H. J. GIRWOOD, Farm Architects, 49, Pall-Mall, London; to whom sealed Tenders must be sent on or before JUNE 15th. The lowest Tender will not necessarily be accepted.

[For remainder of Contracts see next page.

CONTRACTS.

TO BUILDERS.—Persons desirous of TENDERING for the RESTORATION of SUTTERTON CHURCH, in the county of Lincoln, may see the Plans and Specifications at my Office on and after the 6th of JUNE. Sealed Tenders to be delivered JUNE 20th, agreeably to the form supplied. The lowest or any Tender will not necessarily be accepted.
EDWARD BROWNING, Architect, Stamford.

TO BUILDERS, CONTRACTORS, and OTHERS.—MIDLAND COUNTIES VOLUNTEER REVIEW.—The WARWICK REVIEW COMMITTEE are prepared to receive TENDERS for the ERECTION of TEMPORARY SEATS for Spectators of the Review of Rifle Volunteers, to be held at Warwick on the 24th day of JULY next.
Persons desirous of Tendering, may see plans and specification on application to Mr. R. C. HEATH, New-street, Warwick, of whom further particulars may be obtained, and to whom Tenders must be sent. The number of Seats required will be from 6,000 to 10,000.
Tenders must be sent in on or before the 10th day of JUNE, and the Committee do not bind themselves to accept the lowest or any Tender.—By order of the Committee,
R. C. HEATH, Honorary Secretary.

TENDERS are required for the ERECTION of an EARTH-WORK BUTT in the Tottenham Marshes, for the Tottenham (63rd) Volunteer Rifles. Plan, specification, and full particulars, with P. P. MARSHALL, Esq. Engineer, or Sergeant-Major SYLVESTER, Head-quarters, Northumberland-park, Tottenham. Sealed Tenders, marked "Tenders for Butt,' to be delivered at the Residence of Captain GOSS, Tottenham, on or before SATURDAY, the 8th of JUNE.

TO BUILDERS. — Persons desirous to TENDER for the various WORKS to be done in the CONSTUCTION of MALPAS CONGREGATIONAL CHURCH and SCHOOLS may see the Plans and Specifications at the Independen tSchool, Malpas, from the 3rd to the 7th of JUNE inclusive, and may obtain Bills of Quantities on application by letter to the Architects, Messrs. J. E. & J. D. OATES, Halifax. Sealed Tenders to be sent to the undersigned, on or before the 7th of JUNE. No pledge is given to accept the lowest or any Tender.—By order,
Malpas, May 20th, 1861. T. G. WYCHERLEY, Secretary.

TAFF VALE RAILWAY.—NOTICE to CONTRACTORS and OTHERS.—The Directors of this Company are prepared to receive TENDERS for a Number of Wrought-Iron GIRDERS and PLATFORMS for BRIDGES.—Drawings and Specifications may be seen, and other information obtained, on application, on and after MONDAY, JUNE the 3rd, 1861.—Sealed Tenders, endorsed "Tenders for Wrought-Iron Work," and addressed to the Board of Directors, will be received until TUESDAY, JUNE the 11th, 1861. The Directors do not bind themselves to accept the lowest or any Tender. GEORGE FISHER, General Superintendent.
Cardiff, May 23rd, 1861.

TO PAVIORS and OTHERS.—The VESTRY of ST. MARTIN'S-IN-THE FIELDS will MEET on THURSDAY, the 6th JUNE, 1861, to receive TENDERS for PAVING and REPAIRING the FOOTWAYS and CARRIAGEWAYS of the Parish; also for the SUPPLY of BROKEN GUERNSEY GRANITE, from time to time as may be required. The Tenders will be for three years (determinable at the end of the 1st or 2nd year on three months' previous notice) to commence at Midsummer next. Separate Tenders will be required for each contract. Particulars and printed forms of Tenders may be had on application to Mr. BURSTALL, Surveyor to the Vestry, at the Vestry-hall, between the hours of Ten and Twelve, and no other form of Tender will be accepted. Tenders must be delivered sealed up at the Vestry-hall, endorsed respectively, "Tender for Paving and Repairing Footways," or "Tender for Paving and Repairing Carriageways, and for Guernsey Granite," before six o'clock on the day of meeting. The Contractors will be required to enter into a Contract and Bond with two responsible Sureties (to be prepared by the Solicitor of the Vestry at the expense of the Contractor) for due performance of the Contracts. The Vestry do not bind themselves to accept the lowest or any other Tender.
J DANGERFIELD, Vestry Clerk.
Vestry-hall, St. Martin-in-the Fields.

TO BUILDERS and CONTRACTORS.—WANTED, TENDERS for ALTERATIONS and ADDITIONS to the Blakenhall Farm Buildings, on the estate of Sir Henry des Vœux, Bart. at Cauldwell, near Burton-on-Trent.—Plans and Specifications may be seen after the 5th of JUNE, on application to Mr. WOOD, Blakenhall Farm; or at the Offices of Messrs. J. J. GIRDWOOD, Farm Architects, 49, Pall-mall, London, to whom sealed Tenders must be sent on or before JUNE 17th.—The lowest Tender will not necessarily be accepted.

TO BUILDERS. — Persons desirous of TENDERING for the ERECTION of a PARSONAGE-HOUSE at Titchmarsh, near Thrapstone, in the county of Northampton, may see the plans and specification at my Office, on and after WEDNESDAY, JUNE 5. Sealed Tenders to be delivered JUNE 19, agreeably to the form supplied. The lowest or any Tender will not necessarily be accepted.
EDWARD BROWNING, Architect, Stamford.

TO BUILDERS.—Persons desirous of TENDERING for the ERECTION of NEW SCHOOLS, with Master and Mistress's Residences, at Coppenhall, near Crewe, Cheshire, may see the drawings and specification in the Vestry of Coppenhall Church, on and after WEDNESDAY, JUNE 5th, between the hours of TEN and FOUR. Tenders to be sent in on or before WEDNESDAY, JUNE 12th, addressed to the Architect, Mr. JAMES K. COLLING, No. 6, Ridgmount-place, Hampstead-road, London, N.W. and of whom any further information may be obtained. The lowest or any of the Tenders will not necessarily be accepted.

TO SEWER CONTRACTORS and OTHERS.—The Board of Works for the Westminster District hereby give Notice that they are prepared to receive TENDERS for the Execution of GENERAL WORKS and REPAIRS to the SEWERS, Gullies, Drains, &c. within the district under the jurisdiction of the Board, for the term of one year, commencing from Midsummer-day next. Printed conditions of Contract, schedules of prices, and forms of Tender, may be obtained upon application at the Offices of the Board, where sealed Tenders are to be delivered, by or before FOUR o'clock in the afternoon on WEDNESDAY, the 12th day of JUNE next, at which time and place parties tendering, or some authorized agent, must be in attendance. No Tender will be received unless made out on one of the printed forms, and strictly in accordance with the conditions. The Board do not pledge themselves to accept the lowest or any Tender.—By order,
W. F. JEBB, Clerk to the Board.
Great Smith-street, Westminster, 27th May, 1861.

TO GLASS MERCHANTS and GLAZIERS. About 2,000 feet of GLAZING are REQUIRED immediately, for the roof of a public building, twelve miles by railway from London, the same to be of sheet or other colourless glass, not less than 21 oz. per foot.—Proposals (for consideration), stating description and price per foot, including glazing, to be sent to Mr. WALLEN, 68, Old Broad-street, E.C.

GREAT YARMOUTH HAVEN and PIER WORKS.—The Commissioners of the Haven of Great Yarmouth desire to CONTRACT for the REPAIR and RENOVATION of the ROUND or EAST END of the SOUTH PIER and of the WEST or LAND END of the SOUTH-WEST BREAKWATER. The Commissioners will receive TENDERS for the whole of the Materials and Works required in one Tender, or for the Timber, Iron, Scupper Nails, and Labour in separate Tenders. Conditions of Tenders and Specifications of Works and Materials may be obtained of the Clerk to the Commissioners, Great Yarmouth; or the Deputy Engineer, Gorleston. Tenders addressed to the Commissioners of the Haven of Great Yarmouth are to be delivered to the Clerk, addressed "To the Commissioners of the Haven of Great Yarmouth," before the hour of TWELVE at noon of MONDAY the 10th day of JUNE next, or sent to him by post to arrive before that time. The Commissioners do not engage to accept the lowest or any Tender.—By order,
May 20th, 1861. ISAAC PRESTON, Jun. Clerk.

EAST SOMERSET RAILWAY COMPANY.—The Directors of this Company are willing to receive TENDERS for the CONSTRUCTION of a PASSENGER, ENGINE, and GOODS SHED, at the Wells station. The Tenders must be according to forms, which may be obtained at the Office of Mr. R. J. WARD, Westbury, Wilts, the Engineer, on and after the 18th instant, where plans and specifications may be seen; and must be sent in to me, at my Office, Shepton Mallet, Somerset, on or before THURSDAY, the 6th day of JUNE next. The lowest Tender will not necessarily be accepted.—By order, GEORGE M. MACKAY, Secretary.
Secretary's Office, Shepton Mallet, 15th May, 1861.

TO BUILDERS.—Persons desirous of TENDERING for the ERECTION of the new FARM BUILDINGS, at Teversham, near Cambridge, for John Ware, esq. may see the drawings and specification, at my Office, on and after MONDAY, JUNE 3rd. Tenders to be delivered to me at ONE o'clock p.m. on SATURDAY, JUNE 8th.—I do not pledge myself to accept the lowest or any Tender. WALTER ROBINSON, Architect.
57, Regent-street, Cambridge, May 15, 1861.

SAVINGS BANK.—To CONTRACTORS. The Committee of Management are prepared to receive TENDERS for the ERECTION of NEW BANK PREMISES, in the Vicarage Ground, Westgate-street. Plans and specifications may be seen on and after THURSDAY, the 23rd instant, at the Office of Mr. J. E. WATSON, Architect, 22, Grey-street, where printed forms of Tender may be obtained. Sealed Tenders, marked "Tender for New Bank Premises," to be delivered to the Secretary, at the Bank, Royal Arcade, not later than TWELVE o'clock on SATURDAY, the 8th JUNE.—The Committee of Management do not bind themselves to accept the lowest or any Tender. JAMES POTTS, Secretary.
Newcastle-on-Tyne, May 15, 1861.

TO BUILDERS.—Persons desirous of TENDERING in separate ESTIMATES for the COMPLETION of TWO BLOCKS of FIRST-CLASS HOUSES, adjoining in carcase, and situate in Ladbroke-gardens, Bayswater, are requested in the first place to communicate by letter, with references, to the Architect,
Mr. W. G. HABERSHON, 38, Bloomsbury-square, London, W.C.

TO BUILDERS.—WICKHAM, near Fareham, Hants.—Builders willing to TENDER for the RESTORATION and RE-SEATING of WICKHAM CHURCH, may see the Plans and Specification by applying to the Rev. T. A. WILLS, at Wickham, any time after MONDAY, the 27th instant. Duplicate copies will also lie at the Offices of the Architects, Messrs. FRANCIS, 38, Upper Bedford-place, W.C. to whom the Tenders are to be sent on or before SATURDAY, the 8th of JUNE next, and of whom any further information may be obtained. The lowest or any Tender will not necessarily be accepted.
London, May 23rd, 1861.

TO BUILDERS.—Builders desirous of TENDERING for the TAKING DOWN and REBUILDING of a FARM-HOUSE at Feversal, in the County of Nottingham, may inspect the Drawings and Specifications between the hours of TEN o'clock in the forenoon, and SIX o'clock in the afternoon of each day, at the Offices of Messrs. BRODHURST & HODDING, in Worksop. Tenders to be delivered in, free of cost, on or before the 24th day of JUNE next. The lowest or any Tender will not necessarily be accepted. ALFRED BRODHURST.
Worksop, 22nd May, 1861.

THE VESTRY of the PARISH of SAINT MARY, LAMBETH.—To BUILDERS.—Persons desirous of TENDERING for SUNDRY ADDITIONS and ALTERATIONS, &c. to be made to the Vestry Hall, Kennington Green, may see the Drawings, Specification, and Conditions, at the Office of the Architect, Mr. R. PARRIS, Wolsingham-place, Lambeth, on and after WEDNESDAY, the 5th day of JUNE next, where copies of the Bills of Quantities may be obtained on payment of half-a-guinea each. Tenders are to be delivered to the Clerk, at the Vestry Offices, on TUESDAY, the 11th day of JUNE next, by TWO o'clock, p.m. The Vestry do not engage to accept the lowest or any Tender.
THOS. ROFFEY, Clerk to the Vestry.
Vestry Offices, Kennington, 30th May, 1861.

BOROUGH of SWANSEA.—SWANSEA LOCAL BOARD of HEALTH.—To CONTRACTORS of SEWERS and PUBLIC WORKS.—SEWERAGE CONTRACTS, J. and K.—The Local Board of Health for the Borough and District of Swansea, in the County of Glamorgan, are prepared to receive TENDERS for the CONSTRUCTION of the following SEWERAGE WORKS:—
CONTRACT J.—For the construction of Brick Sewers as under:—About 2,827 lineal yards of Brick Sewers, varying from 3 feet 4½ inches by 2 feet 3 inches to 2 feet 3 inches by 1 foot 6 inches diameter, with man-holes, ventilating shafts, lamp-holes, street gullies, and cast-iron works, and other works connected therewith.
CONTRACT K.—For excavating the ground and laying Earthenware Pipe Sewers as under:—About 17,000 lineal yards of Earthenware Pipe Sewers of various sizes, varying from 18 inches to 6 inches in diameter, with man-holes, ventilating shafts, lamp-holes, street gullies, cast-iron work, and other works connected therewith.
The drawings may be inspected, and a copy of the specification, with forms of Tenders, bills of quantities, and schedules for prices obtained after TUESDAY, the 28th of MAY instant, by payment of 15s. the set, on application at the Office of Mr. EDWARD COUSINS, the Surveyor, Guildhall, where further information relative to the proposed works may be obtained. Sealed Tenders to be delivered at the Clerk's Office, on or before MONDAY, the 24th of JUNE, 1861, endorsed "Tenders for Sewers Contracts J. and K." The Local Board of Health will not hold themselves bound to accept the lowest or any Tender.—By order, C. B. MANSFIELD, Clerk.
Guildhall Offices, Swansea, 21st May, 1861.

TO BUILDERS.—St. Andrew's Church, Cardiff.—PLANS and SPECIFICATIONS for the Completion of the Fabric of this Church may be seen at our Office at Llandaff; and Tenders sent to our Office, at 6, Whitehall, London, on or before the 14th day of JUNE. The lowest or any Tender not necessarily accepted.
PRICHARD & SEDDON, Diocesan Architects,
Landaff, and 6, Whitehall, London.

TO BUILDERS and CONTRACTORS.—TENDERS required for RESTORING and REFITTING the CHURCH at Caistor, Linconshire. The plans and specification may be inspected at the Vicarage House, Caistor. Tenders to be sent to the Vicar, not later than JUNE 15. No pledge given to accept the lowest, or any of the tenders that may be sent in.

TO BUILDERS. — Persons desirous of TENDERING for the ERECTION of NEW FARM BUILDINGS at Mr. Baker's Farm, Kempston, near Bedford, the property of Joseph Tucker, esq. of Pavenham, Bury, may see the plans and specifications, at Mr. BAKER'S House, from TUESDAY, the 4th, till TUESDAY, the 11th of JUNE, inclusive.—Tenders to be sent in on or before the 12th of JUNE, to WILLIAM WATSON, Surveyor, Henlow, Biggleswade.—The lowest or any Tender will not necessarily be accepted.—Henlow, May 29, 1861.

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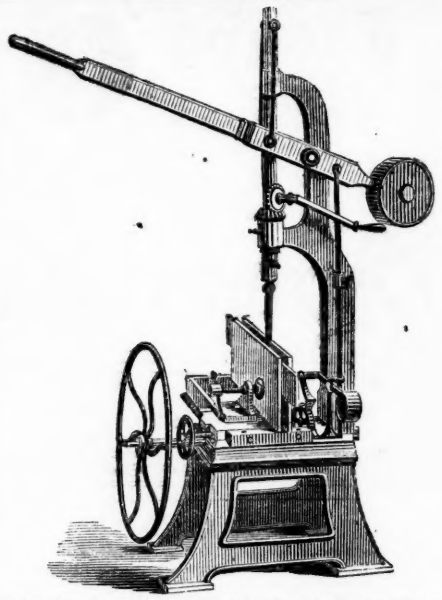

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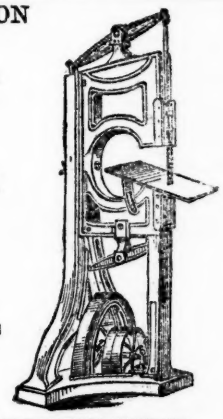

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The Patentees and first Makers of Wrought-iron Tubes.

The Builder.

VOL. XIX.—No. 956.

Jottings in the East of London: the Weavers of Spitalfields.

DO you ever go East, good reader? Something is to be learnt by doing so,—the miserable nature of the large mass of constructions around the metropolis, the wretched conditions under which many dwell, and the undesirability of offering obstruction to the proposed clearing away of such places by railway companies and others. Going thither from the West, do not overlook the sight to be obtained,—say between the hours of twelve and five,—from the guarded resting-place in the carriage-way from Cannon-street, Cheapside, and Fenchurch-street, to London Bridge. From the Docks come large covered vans, heavily laden with all descriptions of merchandize, the produce of every part of the world; while railway vans, coal waggons, the carts of the country carriers, carriages of the well-to-do, omnibuses, cabs, and other conveyances, form a struggling mass, seemingly inextricable. In all directions, far as the eye can reach, the footpaths, too, are thronged with countless wayfarers.

We would have visitors, when viewing the "Lions of London," not to omit this sight, for nowhere else can be witnessed anything which conveys such an idea of the population, wealth, and industry of the nation. Hour after hour of the day, this vast tide of life continues to ebb and flow; and even in the night there is no stillness there. Noting this indescribable bustle, the incessant going and coming to and from the heart of the metropolis, and remembering that there are many other crowded thoroughfares, some notion may be obtained of the extent of the accommodation required by the millions who cause this overflow. The scene which meets the eye shows the necessity of very speedy changes in the mode of transport of both goods and passengers. The rapid increase of the population, manufactures, and commerce of Great Britain, is the world's wonder. Each week the difficulty at London Bridge will increase; and, without very speedy measures, a main artery closely connected with the heart of London will become congested, causing even greater loss and inconvenience than are now felt.

If an extra number of waggons travel from the Docks to the Borough, for a time the traffic is almost prevented. In slippery weather matters are worse; and if Cheapside pavement chance to need repair, the delay causes not only a considerable waste of time, but also loss of money. For these and other reasons it is most necessary to push forward the metropolitan railways as rapidly as possible. At present the various railway termini add to the overcrowding: when, however, the whole system has been fully carried out, the advantages will be evident. The road along the Thames, too, is no less essential.

It is not very easy to make way from the spot mentioned to Fenchurch-street station; but, that being done, you may, on the right hand and on the left, view from the railway the homes of people which are on the road to Stepney. We have sketched a morsel of the heap of rubbish.* Can anything more dilapidated or ill-arranged than these dwellings be conceived? Here are masses of houses, small in size, badly constructed, without effective drainage, and in many other ways abominable. From the streets, bad as many of them are, stretch back slums which are worse,—slums in which human life is always in danger. Passing Mile-end, we stop at Stepney; and, wandering thence towards the Mile-end-road, it will be observed that in the Stepney district there are many wide streets and open squares. In some of the latter are houses and gardens which have once been pleasant, but have fallen into decay. This neighbourhood would be healthy if it were supplied with pure water, and the drainage and paving in parts were improved; for, generally, there is ample space for the buildings, and the soil is of that kind which gets rid of many impurities. Having passed the venerable church of Stepney and its curious monuments, some alms-houses of recent construction will be seen, which contrast in an agreeable way with many such establishments. The gardens are well kept, and the sanitary arrangements seem to be good. On the front of the houses is the following inscription:—

"The gift of Dame
Jane Mico, Relict of
Sr. Sam. Mico, Mercer, decd.
Built Anno 1691.
Rebuilt
by the Worshipful Company of Mercers
A.D. 1856."

On the way to Mile-end-road, it may be observed that great improvements are going forward. Most of the houses of the silk-weavers in this locality — notwithstanding the present unfortunate circumstances—present the neat appearance which we have before described as belonging to them. In several directions, the cottages—or, more properly speaking, hovels and huts—are giving way to more substantial buildings. At one point, a large space has been cleared, which it is hoped will be preserved open by the parish authorities. A large number of unwholesome houses, unfit for the occupation of families, has been cleared away; and wide roadways and paved footpaths are laid down, along which will be raised, it may be anticipated, substantial houses.

Much objection has been made to the demolition of the houses of the working classes by men who are earnest in promoting the welfare of the industrious and poorer classes of the community; and we have been amongst the foremost in calling for other provision for the occupants, where this is done. When, however, we consider the onward progress of this capital and the country generally—when it is seen that many of the new dwellings of the tradesmen and middle classes exhibit a marked improvement; and knowing too well that, in these districts the families of industrious workmen are placed in homes which weaken, degrade, and destroy them,—we cannot oppose the sweeping away of such charnel-houses.

No one who has thought with care on this most important subject, can avoid regretting the inconvenience which is felt by many during the time of transition. It is certain, however, that good will result. Thousands who had been living in tenements which, during the last twenty or thirty years, have been pulled down, have found their way to houses in decent-looking streets, which, although, as we have often observed, not what might be wished, are much better than those left; and in many localities we find coalporters, dustmen, and costermongers in houses of such character as they would not formerly have ventured on.

As we have often said, if houses of similar appearance, but differently arranged, were provided, they would be better appreciated by the masses of the working classes, than are the large block buildings which have been reared. However, we pass on towards the Mile-end-road—running from the turnpike gate towards the country, in the Roman fashion of a straight line, as far as the eye can reach.

Formerly, as was the case near the Angel, at Islington, and still is in the City-road, long gardens were in front of the houses: these, fortunately, have not been built upon, but thrown into the roadway, which is consequently very spacious. Portions of this are occupied by stone tramways, along which heavy carriages to and from the docks pass readily along. There are several places of note in this road; but our present course only leads us to mention the almshouse for decayed masters of ships,—a picturesque building,—having the front decorated with carvings of old-fashioned ships, dolphins, shells, and other things emblematical of the sea. There is also the following inscription:—

"This Almes-House
wherein 28 decayed Masters and
Commanders of ships or ye Widows
of such are maintained was built
by ye Corpe of Trinity House
in 1695.
The ground was given by Capt.
Heny Mudd of Radcliff an
Elder Brother—whose widow did
also contribute."

The day being fine, several of the ancient mariners,—gentlemanly old fellows,—wearing the blue dress-coats, with bright gilt buttons, which were fashionable in the Prince Regent's days, were moving about. Many a tale of the sea, of its dangers and perils, could these worthies relate. Beyond the gate are two rows of the snug little houses which were often built in William and Mary's reign: carved festoons of marine objects form ornaments in several parts. In the centre is the quaint-looking chapel: the little garden-plots are already gay with flowers, and the grass is brightly green. The neatness and cleanliness of every part are remarkable.

From the gate turning westward is a street in which is a market for costermongers: the oily smell of frying fish, which is common in many eastern parts, unpleasantly taints the air, and the scavengers do their duty very badly. We are told that the want of care in this respect is often observable in the atmosphere. Some of the little streets leading hence are planted with very small undrained houses; and from these run courts, in which life must be a struggle. It will be to the advantage of those who now occupy these places if they are swept away. The closet and other accommodation is generally bad.

With difficulty we find our way to Barnsley-street, a place of evil repute, which was one of the possessions of the miserly Mrs. Emsley, who supplied the poor with tenements which the people say were "not fit for dogs," and met with a terrible death. On the road are the church and schools of St. Bartholomew, Bethnal Green. This church, which is one of the ten or twelve churches built by the exertions of the late Bishop of London in this district, is a spacious building: the spire is, however, yet to be finished. The dwellers here regret this very much, the more especially as all the other churches have been completed. It appears that the Incumbent has offered 100*l.* towards this object, and that 140*l.* besides have been collected: the completion of this work would be a great ornament to the neighbourhood.

The boys' school, girls' school, and infants' school are large, plainly built, but useful structures: they are well attended; and truly such schools, where the young can be taught at very moderate cost, are in this district most necessary. We hear of streets in which every door would be thrown open for the shelter of a thief. We see in little bits of waste land groups of men and boys gambling. We hear terrible language, even from very young children. The chief bulk of the people are, however, decent hard-working persons; many of them earning very small wages, but remarkably intelligent, and anxious to get their children to school and themselves into better circumstances. There are indications of this in various quarters; for instance, in the maintenance of cheap schools and penny banks. The St. Bartholomew schools are well deserving of support, and we hear that a benevolent lady, who has done

* See p. 374.

great good in other parts of this district, has been a liberal friend. The Mile-end town charity schools, in the Cambridge-road, also need support.

In this part of the metropolis, as in others, if the masses of the dwellings are dwarfed and dilapidated, the public-houses manage to keep up an appearance. They are gay with placards of "unsophisticated gin," "reputation ales," and "Jones's gin at 4d. that speaks for itself," or makes others do so in a way not very desirable.

It is a feature of this neighbourhood that many of the streets have no names attached to them, or these are so indistinct as to be almost illegible. This has caused the difficulty in finding Barnsley-street. We have at last reached it, and see that great improvements are in progress, for the property has come into fresh hands The houses, so far as the walls are concerned, are substantial; but when in Mrs. Emsley's *care*, the interiors were allowed to go completely to ruin; every room was let to a separate family; and the revenue she must have derived by this means must have been very great. Considering it was not good for the people themselves, many of whom were of very bad character, to live in this way, the present owners had certain of the houses cleared of their tenants. The buildings were put into repair, painted, and papered, and into these some of the most respectable of the inhabitants were glad to remove, taking care not to overcrowd. The other houses are undergoing the same process; and as soon as one is finished it is immediately let. The registrar of deaths will be able, ere long, to report on the results of this change.

Close by are many houses in a most neglected condition; for instance "*Pleasant-place.*" This is a square of most wretched and dilapidated houses, as our sketch shows. In the centre some people have planted caravans, in which their families live. At one time it was occupied with gardens, and then to the eye it would no doubt be pleasant enough. It is now a scene of wreck and decay, and there are worse branches from this spot—slums occupied with every kind of filth and refuse.

It is not for such places as these—places disgraceful to this great city, and unfit for the occupation of man—that we should strive to stay the progress of improvement.

We spoke just now of the weavers of Spitalfields, and of their present depressed condition—a condition that is constantly growing worse.

Always bearing with patience suffering and distress—always anxious for employment,—the weavers have gone on from bad to worse, until they now seem to have fallen into despair, and means are being taken to enable a certain number of them to emigrate or remove to some better field for labour.

Years ago we directed attention to the Spitalfields silk trade, and recommended the course which is now suggested: the result of the struggle between hand and steam looms was certain.

Notwithstanding the shrewdness of the majority of the weavers in political and other questions, it was not easy to get them to understand the principles which govern the price of labour. They have from time to time petitioned Parliament for the imposition of high rates of duty on foreign silks imported, but they were not anxious to improve their skill in design; and, notwithstanding the great modern improvements in machinery, they continued using the same kind of looms as their fathers and grandfathers had done. They worked singly or in families, without any general organization; and the pressure of the times, or other circumstances, left them in a measure at the mercy of capitalists.

Although the evils which threatened Spitalfields were seen by many others, the weavers were unwilling to believe in the distress which was coming upon them, and were at times angry with those who, taking broad and general views, endeavoured to lead them for their own good. Nor can we much wonder at this, when we consider that several generations have been reared to this kind of work; the families of the weavers, originally of a foreign stock, have married one with another, and they are generally, in a most remarkable degree, attached to their homes and gardens. The looms used by the men and women form property in which they take interest, and the general disposition of the workers inclined them to hope for beneficial changes, which in the ordinary course of affairs were not likely to occur.

As a contrast to the condition in which the Spitalfields weavers are placed—large families by their united exertions unable to procure the necessaries of life; young girls and boys, by the aid of the old-fashioned machine, unable to earn more than a few pence in the week by the labour of silk-winding,—we look abroad, into various parts of England, and find that, with but few exceptions, the remuneration of the labouring classes of the country has been steadily progressing, and that both food and clothing have been considerably lowered in price. Macaulay has shown that, towards the close of the seventeenth century, all classes were paid less wages. Agricultural labourers received only from 2s. to 3s. a week with food, or from 4s. to 5s. without. In 1661, the justices at Chelmsford fixed the rate at 6s. in winter and 7s. in summer: at this time all the necessaries of life were dear.*

In 1730, the daily earnings of bricklayers and mechanics employed, at Greenwich Hospital, averaged 2s. 6d. a day, with bread dearer than at present. Even in 1800, the wages of a good mason in London were only 16s. a week, when wheat was 90s. 6d. a quarter. In last week's London market (May 24, 1861), the best English old white wheat sold at from 68s. to 74s. per imperial quarter; new white, 40s. to 66s.; and red wheat, from 39s. to 67s. The same class of workmen are now receiving 33s. a week, and all kinds of clothing materials, silk included, are greatly reduced in cost since 1800. Mr. Chadwick, of Salford, mentions that whilst the actual money wages paid in the cotton trade have increased during the last twenty years, from 12 to 28 per cent., the working hours of the labourers have been reduced by the ten hours' factory bill, during the same period, nine hours per week, or not less than 15 per cent. In the silk mills there has also been a reduction of six hours a week. Mr. Chadwick states that the number of persons in Lancashire, directly engaged in the various branches of the cotton trade in 1859, was estimated at 400,000 persons; and that the average rate of wages paid to them (including boys, girls, and women), was 10s. 3½d. per week, or 10,653,000*l.* per annum.

In the silk trades an advance of wages has taken place in the branches in which steam machinery and capital have been entirely employed, equal to more than 10 per cent. In some branches of the building trades, since 1800, the amount of wages has been more than doubled. During the last quarter of a century in the mechanical trades (with but few exceptions) there has been an advance equal to 45 per cent. In the miscellaneous trades, including upwards of eighty classes of workmen, the rate of wages has generally been maintained, and in some instances has been considerably advanced; and it is well worthy of notice, that while the hand-loom weavers of Spitalfields are starving, the demand for card-room hands—whose labour requires little skill, and is easily learned—has led to an increase of wages in Darwen, of fully 100 per cent.

In one mill, where twenty years ago, no hand in the card-room earned more than 6s. a week, now many of them earn from 12s. to 18s. a week, with nine hours less labour. The wages-books of a mill near Blackburn and Rochdale give one instance where a father, son, and daughter, earn 2*l.* 12s. a week, or 135*l.* 4s. per annum. In another the father and four girls earn 3*l.* 10s. a week, or 182*l.* per annum. These are said to be ordinary examples; but in many families the earnings range much higher. There is one case, in which five daughters and two sons working in a cotton-mill earn amongst them three guineas a week; whilst the father, working as a blacksmith, earns 30s. a week, showing a total income of 232*l.* 10s. Higher sums than this might be mentioned. It will, however, serve our present purpose to mention that Mr. Baker, inspector of factories, states that the wages paid to the factory operatives of the United Kingdom in 1856 amounted to upwards of 19,000,000*l.* sterling; that in no branch of textile labour had wages been reduced since 1833; and that the average increase was 12 per cent.,—in one instance 40 per cent.

Considering this prosperity, the demand which exists in various districts for factory hands; believing that the labour can be easily acquired by persons of ordinary ability; and having seen from time to time, and only very recently, the misery and distress of the hand-loom weavers of Spitalfields, we trust that the means will be forthcoming to try the experiment on a large scale of enabling the families from Spitalfields to remove to places in which their labour may be directed into other channels profitable to themselves and useful to others. Emigration to pastoral districts and colonies has been suggested, and it is reported that those weavers who have succeeded in getting to distant places, have done well as shepherds, and in other walks. The expense of emigration to the colonies to any useful extent would be very great, and we think if the weavers were well to consider the advantages which would accrue to them from turning their attention to the kinds of labour which they might obtain in their own land, they would take the course indicated.

It is, unfortunately, the case that, even in need, it is difficult to prevail on English workmen to change their pursuits. We have noticed hundreds of persons who have been reduced to beggary by the changes in some branches of trade rather than turn their hands to some other kind of work which they were well able to manage. For instance, the stage coachmen and guards, and others engaged on the old roads, refused situations on the new railways. Some potters stuck to their antiquated wheels. A few old ladies even to the present day persist in making their stockings with knitting needles, with a great deal of extra cost, and an enormous amount of unnecessary labour.

In the ornamental and artistic departments of labour this peculiarity is frequently to be noticed, and it may be worth while to mention one or two cases.

At the present time, and for the last few years, the improvements in the printing of colours, by means of lithography and block-printing, has caused injury to the trade of numbers of persons, both men and women, who formerly made a very good income by colouring prints by hand. We have heard of a family who, by the cause above mentioned, were thrown out of work: they were without food and in great distress. The father and two sons were clever with their pencil, and had a good eye for colour. On mentioning the circumstance to an ornamental painter he agreed to give them a trial; offering in the first instance, a moderate amount of wages, and agreeing to raise them as they were able to adapt their hands to work. In less than six months the father and sons were in the receipt of first-class wages. As another example, it may be mentioned that when the publication of the annuals, and the introduction of fine engravings into books, came into fashion, there was a great demand for this kind of engravers. In the studio of Mr. Heath, of the Messrs. Finden, and some others, engravers were employed at very high salaries; and many steel line-engravers were able to earn from ten to fifteen guineas a week. The improvements in wood engraving, and the facility which that style of illustration had for rapid printing, the intro-

* See article on this subject in No. 215 of the *Quarterly Review*, published in February this year.

duction of lithography, &c., caused the almost entire disuse of small book plates. The income of the engravers declined; and, in the course of a short time, it was difficult to obtain employment in this branch at all. Some continued, notwithstanding all discouragement, and did an amount of work for 10s. for which they had been previously paid £5. Others sought for different work: some, who had in their early days acquired skill as map and mechanical engravers, turned again to that, and in the railway times made a good thing of it. Others took to drawing on wood, painting in water colours, or lithography. Others opened print and stationers' shops, and in various ways found employment which enabled them to keep the "wolf" from the door. We could give many other illustrations, but what has already been said will perhaps induce some of the Spitalfields weavers to take a right view of their position, and endeavour themselves and prevail on others to look around and see in what way they can find employment more certain and remunerative than their present work. It is to be hoped that the influential committee which has been appointed will succeed in obtaining such general support that they may not have the pain of feeling that a considerable proportion of 6,000 or so of industrious workmen are hungry and perishing in the British metropolis.

There are other crafts who might usefully take warning by the sad position of the hand-loom weavers of Spitalfields, and endeavour by the introduction of increased skill, a greater degree of taste in the style of their manufactures, and making available to the fullest extent the facilities afforded by modern science, to improve their condition. Without this be done, their labour will fail to be remunerative, and will be eventually superseded by that of others who move with the stream of intelligence.

Our walk, however, has become a talk, so here we end it.

ON THE OPERATIONS LATELY CARRIED ON AT BAYEUX AND CHICHESTER CATHEDRALS.*

THE preservation of the monuments connected with our civil, or our religious, history is a subject of so much importance, and it is one which appeals so strongly to the feelings of all who are connected in any manner with the architectural profession, that it would be useless here to enter into any explanation of the reasons for my venturing again to call your attention to the contemporary events I seek to place in parallel. A great national calamity has befallen us in the utter demolition of the beautiful spire of Chichester cathedral: it seems to be apprehended by persons able to form correct opinions in such cases that the spire of Salisbury cathedral *is* in a state nearly as dangerous as that of Chichester *was* about twelve months since; and some others of our most beautiful Mediæval buildings are unquestionably in a very unsatisfactory condition. Under these circumstances it seemed, *to me* at least, very desirable that an attempt should be made to derive all the practical information it was possible to do from the lessons furnished: on the one hand, by the sad accident which has attended the works at Chichester; on the other, by the successful operations of the same nature executed at Bayeux. Possibly, in this manner we may learn the nature of the danger now threatening Salisbury, and the best means of obviating it; at any rate, it is our duty to compare the technical processes adopted in the respective cases referred to, which have led to such markedly different results.

In the case of the Chichester Cathedral, it would appear that the objects which the original promoters of the restoration proposed to themselves, and which served as the basis of the instructions given to the architect, were "to remove the existing choir fittings, and to open out the choir, in order to afford greater accommodation for the public at the cathedral services;" and it was distinctly understood, as I have been informed, that "*the works so contemplated were not to include any structural repairs.*" The article in the *Builder* of March 2nd, 1861, from which the quoted words not in italics have been extracted, proceeds to observe that "the ancient stalls, and the Arundel screen, concealed, to a considerable height, the surfaces of the piers under the great arches of the steeple." The piers rose to a height of about 45 feet, from the floor to the springing of the semicircular arches; the openings of the latter being respectively 25 feet 8½ inches and 24 feet 2 inches in the portion of the arches which was able to produce any dynamical action. Above the semicircular arches there were some pointed discharging arches of great strength, if we may judge by the published description of them; but as the weight supported by the two series of arches was eventually brought upon the piers at the intersection of the nave and of the transept, their stability, and that of the superincumbent tower and steeple, was in fact made to depend upon the resistance of those piers to the various efforts exercised upon them. "The height of the extreme portion of the steeple was about 272 feet from the ground; the weight of the superstructure" (from the line of the capitals—I still quote the *Builder*) "was about 5,664 tons; the bearing surface of each pier is stated to have been 83 feet" (or 11,952 superficial inches), though from some dimensions I obtained in the cathedral itself I suspect that the available bearing surface was not much more than 74 feet (or 10,656 superficial inches; or, in round numbers, the crushing weight at the springing line might have varied between nearly 264 and 300 lbs. per superficial inch, acting upon an irregular rectangular pillar, whose height did not exceed nine times the dimension of the smaller side; and it is to be observed that the longer axis of the piers corresponded with the centre line of the wider openings, and to some extent with the line of the action of the prevailing wind, thus offering the greatest resistance in the direction of the greatest external action to produce overthrow.

The piers of the tower (as hereafter I propose to call the piers at the intersection of the nave and transept, immediately under the tower and spire), were portions of the early part of the cathedral; and they were constructed, as we can now too plainly perceive, in the very worst possible manner. They were formed of a species of ashlar casing, composed mainly of a tertiary shell limestone from the Isle of Wight, with, from here to there, stones obtained from other quarries; and the interior was filled in with concrete, apparently made of chalk-lime mortar, and broken stones and flint. Now, the Isle of Wight stone itself is said only to be able to support a crushing weight of from 466 to 566 lbs. per superficial inch, when used in the direction of the bed; although I am myself far from admitting the correctness of the experiments on which this statement was made. Yet as the sectional area of the ashlar coating was not more than one quarter of the whole area of the piers, and the mortar of the interior was so badly made as to offer hardly any resistance;—nay, rather, to act in such wise as to tend to burst the outer casing, and at any rate to fatigue, rather than to assist the ashlar;—the wonder really is that the piers should have supported for so many years, as they actually have done, the weight thrown upon them. It is evident, indeed, even now, that some very serious settlements must have taken place in these piers, and in the arches over them, at a very early period in the history of Chichester Cathedral; for on the eastern wall of the transept it is easy to discover that, when the south-eastern part of the transept was built, the horizontal courses over the arches of the aisle had been deranged by the subsidence of the great piers, and that they had sunk to such an extent, in the immediate neighbourhood of the piers, as to require the introduction of a feather-edged course to bring the masonry to a level line. Some distinctly marked ancient movements may likewise be traced to have existed in the various arches still standing in this part of the cathedral, all of which are of a remote date; but little attention seems latterly to have been paid to them, because they had not increased of late years, and because the parts of the piers, which displayed the effect produced upon them, were hidden by the woodwork of the stalls, and by the Arundel shrine. On the recent demolition of the last-named accessory details (the stalls and shrine), the defects of the tower supports were laid bare. Large fissures were found to exist in the piers, and in the south-west one it was found that a large portion of the ashlar casing had actually been cut away to receive the Arundel shrine: the nave arches had likewise been distinctly fractured, in consequence of the subsidence of the piers. From all that I could observe, I feel convinced that this subsidence had arisen from the compression of the masonry of the piers themselves, and not from any compression of the foundations. A state of equilibrium had, however, been attained; and though it might at any moment have been disturbed, had any new forces been brought to bear on the building, yet that equilibrium might in all probability have lasted for centuries if the works for the removal of the screen and stalls had not been undertaken. The vibration of the steeple has been dwelt upon as a cause of the failure of the tower piers to a much greater extent than I think was justified. It is more than probable that at the precise moment of rupture the effect of the wind may have caused a movement which precipitated the fall; but the steeple had for centuries been exposed to and had resisted the effects of gales more severe than the one which is considered to have produced the catastrophe we so much deplore; and even in the early spring of last year (1860) the steeple had been exposed to a gale exercising a horizontal effect more than double that of the gale of 21st February last. The immediate cause of the fall of Chichester spire must, then, I think, be sought for in the operations lately carried on for the repair of the tower piers.

The various instances quoted by Professor Willis of the fall of other steeples, and the accidents which have lately occurred to some of the great engineering works of the age, might have induced the parties entrusted with the maintenance of Chichester Cathedral to suspect that there was danger in disturbing any portion of structures so badly built, as nearly all Mediæval buildings notoriously are. I cannot, therefore, for my own part, refrain from expressing my regret that the committee of 1859 should have adopted as their ruling principle "that the accommodation in the cathedral was alone to be attended to, and that no structural works were to be undertaken." The limited instructions given to the architect under this arrangement compelled him to seek for temporary palliations for any evils he might discover in the course of removing the old works; and were, in fact, his justification for attempting to recase the fissured piers, rather than at once undertaking their reconstruction. Still, when a building has stood apparently unmoved for centuries, it is difficult to believe that a few slight jars, or the removal of some accessory fittings which seem to have only a slight connection with the substantial parts of the structure, would be able to destroy that which had lasted so long; and architects and engineers of the present day who are accustomed to build so strongly as to defy even exaggerated efforts, are too often unaware of the risks they run in dealing with the works of the Mediæval architects, who were, as a general rule, very ignorant of the scientific part of their profession, so far as the use of building materials was concerned. The fatal, though easily justifiable oversight made at Chichester, seems to have consisted in the belief that the interior of the piers of the tower, was able to support any notable portion of the superincumbent weight, whilst the exterior coating was being repaired. From the state of the ruins, and the nature of the phenomena which attended the fall of the steeple, it seems to me evident, as I said before, that the concrete filling of the piers had been originally executed with chalk-lime mortar, badly prepared, and placed in contact with materials which were able to abstract from it the water necessary for the crystallization of its hydrate of lime. It is said that shortly before the fall of the spire, dry mortar dust, as workmen would say, poured occasionally from the fissures: thus proving that the hearting of the piers only consisted, in fact, of an incoherent mass of dry rubbish, able to flow over itself in the manner of dry sand. It would have been possible to have ascertained whether or not this had actually been the case, before the repairs had gone to any great extent, simply by boring into the columns in several places in their heights; and some additional strength might have been given to the hearting by injecting liquid cement mortar through the bore-holes themselves, if the interior had been found to be tolerably sound. As it happens, any such measure would have been utterly useless; and, speaking as I now do from the vantage-ground of *ex post facto* knowledge, it is evident to me that the proper course to have been taken, directly it was discovered that "the tower piers were worse than had at first appeared," was at once to have removed them, and to have rebuilt them in sound ashlar work. *A fortiori*, was it necessary to have needled and centred the tower, and the adjacent arches, when the fresh movements declared themselves in November last? If vigorous measures had then

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* Read at the Royal Institute of British Architects by Mr. George R. Burnell, on Monday, the 27th ultimo. Report of discussion in our next.

been adopted, it would have been possible to have saved the steeple; in January, when "it was determined to add centres in all the arches," there was still time enough to have prevented the fall; in February, it was too late to do any good, and the building must have been condemned, even had no gale occurred on the 21st of February.

The story of the repairs of Bayeux Cathedral is strikingly like this story of Chichester, though the measures adopted, and the results obtained, were so different in the two cases. Settlements had taken place in the masonry of the tower-piers of Bayeux some centuries ago; recent repairs and alterations in the fittings had laid bare the marks of these movements, and had disturbed the conditions of equilibrium into which the materials of the piers had subsided, so that at Bayeux, as at Chichester, the old movements were resumed; the materials forming the piers themselves began to yield unequally in the section of the piers; but, at Bayeux, the hearting was sounder than the external casing, and it was the latter therefore which gave the first symptoms of immediate danger. The architects consulted in this case seem at once to have perceived the magnitude of the threatened evil, and there was a unanimous conviction amongst them, that the only course to be adopted was at once to rebuild the piers. Differences of opinion, however, arose as to the manner of effecting this object. The diocesan architect and M. Viollet le Duc thought that the simplest and cheapest plan was to pull down and rebuild the tower from its very foundations; others thought that the original structure might be saved by judiciously executed underpinning; and M. Flachat—whom some people would call merely a railway engineer—had sufficient influence to persuade the public authorities to adopt that opinion. M. Flachat then was employed to execute the work of reconsolidation, and he succeeded in effecting it, in the manner and under the circumstances recorded in the very remarkable book lately published by his assistants, MM. Dion and Lasvignes. Bayeux Cathedral still stands, with the original work of its square tower and octagon lanthorn intact; and, according to all probability, it will continue to do so for centuries to come. So efficiently have the recent repairs been executed, in fact, that if this glorious structure should again be menaced with ruin, we may confidently predict that the tower will be exempt from the danger, and that its substructure will bid defiance to the ravages of time, so long at least as the stone used for the pillars is protected from the action of frost. I introduce the latter observation designedly, and shall have occasion hereafter to recur to it.

M. Flachat, in this case, commenced his operations (which perhaps I ought to say were only commenced after some injudicious works had been attempted by the local architect of the cathedral) by forming an artificial and incompressible foundation of concrete, upon which subsequently he erected his centres and needles. The concrete itself was supported upon twenty tubes (of wrought iron, and of 4 feet internal diameter), subsequently filled with concrete, and sunk through the earth in such a manner as not to produce any vibration under the pillars; and round these tubes a general platform of concrete, rather more than 9 feet in total thickness, was inserted between the foundations of the piers. The tubes rose about 3 feet into the concrete, and were carried down into one of the stiff blue clays of the lower oolitic formations, into which they penetrated about 2 feet. Upon the concrete bed, M. Flachat then erected a double set of frames of whole timbers, on either side of the centres originally placed to support the arch, for the purpose of forming the seating of a set of needles carried upon a series of screw-jacks, and made to support the masonry of the square part of the tower, a little above the vaulting of the nave and transept. The tower was carefully hooped with iron bars, keyed up whilst they were still hot, so that their shrinkage actually closed the masonry which had previously been fissured over the openings; and before altering the centres to the form M. Flachat thought requisite, he also surrounded the springings of the arches of the nave with a strong wrought-iron cradle, intended to resist the lateral thrust. The centres were then strengthened and modified, so as to allow the easy underpinning of the piers; and the lateral arches of the nave, choir, and transepts, which had participated in the movements of the piers of the tower were carefully shored up. Every precaution was taken to protect the original mouldings of the vaulting, and the sculpture of the capitals, columns, and bases, by inclosing them with rubble masonry, against which the shores were made to act directly. It is to be observed that the needling was totally independent of the centres of the great arches, and was designed solely to support the weight of the tower and octagon above the line of the vaulting; the arches and the spandril fillings were all that bore directly upon the centres themselves.

I must refer you to the book before mentioned for the detailed accounts of the centres, of the calculations on which they were designed, and of the precautions observed in placing them, in making good the old and the new work, and finally in the delicate operation of removing the scaffolding, centres, and needles. I do this with the more earnestness, because I am convinced that the architectural student who might study the various questions incidentally raised with respect to the dynamical efforts exercised, to the strength of the various materials employed, and to the mechanical powers brought to bear upon the work, would rise from such study with a truer view of the importance of the scientific part of his professional education, than would appear to prevail at the present day. In fact, and at the risk of raising an issue somewhat irrelevant to the subject before us, I hold that a properly qualified architect ought to be a scientific engineer, and that a good engineer ought to be equally an educated architect; or, in other words, that the modern distinction between the two branches of our profession is a very unnecessary one. In works such as the repairs of the piers of the towers of Chichester or of Bayeux Cathedrals, the scientific part of the architect's duties prevails in importance over the artistic part; and I know no better authority upon the subject than the book in question. In our own language, I am not aware that any work can be cited in which the operations for the underpinning of a lofty tower have been so elaborately described as they have been by MM. Dion and Lasvigney, who have moreover had the advantage of practically superintending the works they have so well described.

One very important remark remains to be made upon the general subject of the repairs of buildings, so seriously affected as were both Bayeux and Chichester Cathedrals. It is this: viz., that the cost of the works executed by M. Flachat, for the maintenance of the tower and octagonal lanthorn of Bayeux was not less than 32,220*l.*; and that M. Viollet le Duc had estimated that the demolition and the reconstruction of the same works could have been effected for a considerably smaller sum. I am somewhat sceptical, I must confess, as to the correctness of M. Viollet le Duc's estimate in this latter case; and the amount of Mr. Scott's estimate for the repairs of Chichester Cathedral confirms me in this opinion, even after making all possible allowances for the prices of labour and materials in the two countries, for the local conditions, and the peculiar characteristics of the two buildings. Be this as it may, it is proved that the cost of underpinning a structure of about 6,000 tons weight (in round numbers the weight of the upper part of Chichester tower and steeple was 5,664 tons; that of the tower at Bayeux was 3,700 tons) at a height of about 50 feet from the ground, must have greatly exceeded 32,000*l.* Candidly, I do not believe that previously to the execution of the works at Bayeux, or to the fall of Chichester Tower, any architect who had been bold and honest enough to have said that such a work was necessary, would have even been listened to. Still more firmly am I convinced that no committee whatever would, in our commercial country, and in our industrial age, have succeeded in raising the funds for carrying such a work into effect. The Committee for the repairs of Chichester Cathedral were then, I think most sincerely, perfectly justified in confining their attention to the improvement and alteration of the internal fittings, and, for the time, in avoiding to entertain the consideration of structural defects. The manner in which the partial repairs actually attempted were executed, was unfortunately one which revived the injurious actions previously observable in the building, and which had remained, as it were, quiescent for so many years. But the limits of resistance of the piers must have been so nearly attained when the slight jars produced during their recasing, and the trifling alterations in the conditions of equilibrium produced by the removal of the stalls, and of the Arundel screen, could determine the crushing of those piers, that a cup so full might at any time have run over; or, in plainer words, any gale of wind, able to produce a long series of isochronous vibrations in the steeple, might have produced the same effect, and caused the piers to crush under their action. I am firmly persuaded also that no architect or engineer, but one who had been practically acquainted with the wretched style of building adopted by the Mediæval builders, and who had witnessed the failure of modern lofty structures, could have suspected *before the fall of Chichester* spire, the truly awful state of the masonry of the piers on which it rested. There was hardly enough energy displayed in the attempts made to arrest the fall when the imminence of the danger made itself felt; but, apart from the regret all true lovers of archæology must feel at the loss of the original monument, and at the substitution in its stead of a modern copy, it is, to my mind, questionable whether, in the end, the pecuniary cost of re-building the steeple, as must now forcedly be done, would much exceed the cost of underpinning and replacing the original piers and arches. Without being optimists, or holding the extreme doctrine that "whatever is, is right," it should be to us a source of comfort to know that the actual amount of injury produced to one of the most beautiful monuments of the ecclesiastical history of our country has not been greater than the destruction of the steeple, and the adjoining bays of the nave, choir, and aisles, and that, in common prudence, the parties intrusted with the care and preservation of the building could hardly have adopted a different course from the one they have actually followed. That so serious an accident as the fall of this spire should have occurred without injury to life or limb is, I would add, highly creditable to the clerk of the works and to the builder employed; indeed, both Mr. Thompson and Mr. Bushby conducted themselves admirably under these very trying circumstances.

Before closing these remarks, I would beg to be allowed to call your attention to one or two practical questions connected with the nature of the materials employed at Chichester and at Bayeux. On the occasion of the discussion on the paper read by Professor Willis in these rooms, Mr. A. Thompson dwelt upon the small powers of resistance of the tertiary shell limestone, from the Isle of Wight, which had been used in the construction of the piers. He stated that, when loaded transversely to its bed, this material only resisted a load of about 446 lbs. per superficial inch; but when loaded in a direction parallel to the bed, it was capable of supporting a load of 860 to 1,070 lbs. per superficial inch. Mr. Thompson also calculated that the actual load on the superficial inch on the cross section of the piers was not less than 331 lbs., or rather more than my own rough calculation had indicated. Mr. Thompson did not state whether the breaking weights he quoted were the instantaneous, or the ultimate, breaking weights of the stone; and I mention this omission, because it is one which materially affects the value of the information given. Vicat has shown that stones will frequently yield, after three months, under loads which do not exceed one-third of the breaking weight applied instantaneously; and as irregularities in the texture of stones are very common, it is fair to assume that the safety load they ought to be made to bear should never approach even the lower limit. Mr. Thompson stated that the stone had been used bedwise, and therefore in its weakest direction. If so, I cannot but suspect that some error has crept into his observations; for I am sure that a stone which would crush under a load of 446 lbs. would not support for centuries a load of 331 lbs. As to the hearting of the pier, if it had been executed in good chalk lime brickwork, it might have carried a load of about 500 lbs. on the square inch, had every imaginable precaution been taken in its execution; executed as it was in bad rubble, or rather in bad concrete, it could not have supported even its own share of the work, or a load of 331 lbs. Under these circumstances the outer casing must have borne a load far in excess even of the 331 lbs. calculated by Mr. Thompson; and they go far to convince me that the safety limits of the shell limestone must be higher than Mr. Thompson's experiments would appear at present to indicate.

Unfortunately we do not possess any tables of the resistance of English building stones to crushing weights, which can be considered to be perfectly satisfactory. All the experiments recorded, excepting the few mentioned in Mr. E. Clark's account of the Menai Tubular Bridge, have been made upon small cubes of at most 3 inches on the side. In practice, however, the resistances are singularly modified by the joints, and the interposition of mortar between the bearing surfaces; whilst Vicat's experiments upon small superposed cubes seem to indicate that the number of such horizontal joints considerably modifies the resistance of each of the cubes. Again, the results usually quoted, of late years, of the resistances of building materials have been obtained by the

use of the hydraulic press, an instrument which is very likely to get out of order, and whose indications cannot easily be watched with the accuracy required in investigations of this delicate nature. Mr. Hodgkinson, in his experiments on iron, wood, and some kinds of stone; and M. Flachat, in his observations upon the resistances of the Aubigny, Orival, Caen, and Ranville oolites, used a system of levers in the applications of the weights to those materials; and though unquestionably there is a probability of the weights being, in such cases, made to bear unequally upon the exposed surfaces, the danger is not greater than when the hydraulic press is used; whilst, on the other hand, it is far easier to apply the load by slight increments, and to watch its action during even a lengthened period. After all, the most valuable observations upon the resistances of building materials are those to be obtained from observation of the conditions of success and failure of actual constructions, such as Rondelet records in his "*Traité de l'Art de Batir.*"

I said that I would refer to the selection, by M. Flachat, of the Aubigny stone for the ashlar of his new piers; and I do so because I observe that the Aubigny stone is being employed rather extensively in London, and because I am convinced that its use would be attended with danger. M. Flachat chose this stone because it yielded more satisfactory results under the trials he exposed the various local stones to, so far as their resistances to crushing weights were concerned; but MM. Dion and Lasvignes expressly state that the Aubigny stone yielded easily under the action of frost, if used exteriorly. Any one who may have examined the Mediæval buildings in the town of Falaise must also be convinced that the opinion last quoted is lamentably correct; for the Aubigny stone used there has decayed in a frightful manner. I am, however, for my own part, disposed to believe that even when used in the interior of a building the Aubigny stone is exposed "to take on" a decay somewhat analogous to the mysterious decay which we know affects the Purbeck or the Petworth marbles in our own cathedrals; and though the sectional area of the piers at Bayeux is so great as to remove any fear of the decay of the outer surface affecting the stability of the structure, yet I fear that the edges of the various courses will ultimately crumble away like those of the Purbeck marble, and produce an unpleasant series of horizontal lines upon the piers. It may be centuries before this effect is produced; but I confess that, knowing what I do know of the Aubigny stone, I regret to see it used in a building destined, I hope, to exist "not for an age, but for all time."

Finally, some importance seems to have been attached by the persons who were charged with the superintendence of the recent operations for the repair of Chichester Cathedral to the use of blue lias lime in conjunction with the stone casing applied to the piers. In this case, I think that the use of that cementing material was a mistake,—of a minor character, it is true, because whatever lime or cement had been used was a matter of absolute indifference, and would in no wise have prevented the fall of the steeple. In all future operations of the same kind, however, to be executed elsewhere, it seems to me that we may learn a useful lesson from what thus occurred at Chichester. Evidently the rapidity of setting, and the hardness of the set mortar, are the most essential conditions to be required of those materials in works of restoration; and, therefore, I hold that the new casing ought to have been set in Portland cement, rather than in blue lias lime mortar. M. Flachat used large quantities of Portland cement in setting the large ashlar blocks he used in the piers of Bayeux; *à fortiori*, a cement of equal energy, should have been used in setting the thin casing applied at Chichester. In addition to this consideration, there is another practical objection to the use of blue lias lime in the south-east of England, in the fact that there are so few masons, or even bricklayers, who know how to use it; and I am strongly of opinion, from what I actually witnessed in the ruins of Chichester Cathedral, that the blue lias lime there employed had never been properly slacked: its hydration was deficient in many samples.

The fall of Chichester Cathedral, and the danger said to menace the glorious spire of Salisbury, raise one singular subject of discussion which may fairly be submitted to this Institute, which boasts for one of its objects the advancement of the true interests of architectural education, and, I hold by implication, of the preservation of the best models of architecture. It is this, viz.,—whether it be not desirable that some organization, analogous to the one which prevails amongst our neighbours, for the preservation of the monuments connected with the history of the country, should be introduced in England. The central Government of France contributed not less than 28,000*l.*, out of the 33,000*l.* nearly, spent at Bayeux. The repairs of Notre Dame at Paris will eventually cost the State no less than 360,000*l.*; and, as the ancient buildings of a country are, in fact, a portion of the intellectual property of the whole nation alike, it does seem to me that their maintenance should not be left to local or casual efforts. No doubt the absorption of the ecclesiastical and capitular revenues of the French churches by the Governments subsequent to 1789, has placed the ecclesiastical affairs of that country on a different footing to those of England. Nevertheless, I cannot conclude without expressing the regret that the attempts now being made to complete the restoration of a monument so closely connected with English history as Chichester Cathedral should depend for their success on the results of a public subscription. At present it would, of course, be in vain to expect any assistance from the State, and *our* efforts must be confined to assisting the subscription list. This may be done with the more confidence that Mr. G. Gilbert Scott has been entrusted with the execution of the future works,—a fact which ensures that everything which science, skill, and taste can bring to bear upon them will be applied.

EXHIBITION IN HALL OF THE PAINTERS COMPANY.

THIRTY-EIGHT competitors have sent in 160 specimens of graining, marbling, and "decorative art," in reply to the offer of prizes by the Painters' Company. These are now exhibited at Painters' Hall, No. 9, Little Trinity-lane, Cannon-street West, City, where they will remain till the 30th of June inclusive. Admission is gratuitous.

The judges appointed by the Company, assisted by some members appointed by the Council of the Society of Arts, have awarded the premiums as follows:—No. 5, writing on glass, B. Edmett, silver medal and freedom of the Company; No. 17, ornamental pilaster and sanded decoration, William Simpson, No. 102, Mary-street, Hampstead-road, bronze medal; No. 18, inlaid marbling and graining and panel decoration, Thomas Donatti, in the employ of Messrs. Morant, Boyd, & Morant, silver medal and freedom of the Company; No. 21, inlaid marbling and graining, W. Betteridge, in the employ of Messrs. Morant, Boyd, & Morant, silver medal and freedom of the Company; No. 25, Arabesque, C. Kitzerow, in the employ of Messrs. Morant, Boyd, & Morant, certificate of merit; No. 30, practical writing, John Henry Trotter, 8, St. Dunstan's-hill, certificate of merit; No. 31, practical writing, D. O. Haswell, 49, Greek-street, Soho, bronze medal; No. 33, marble columns and inlaid marbling and graining, Chas. Hibble, 22, Grafton-street, Fitzroy-square, certificate of merit; No. 34, graining and marbling, Wm. Jas. Cloake, 7, Gt. Dover-street, Borough, bronze medal; No. 36, practical graining and marbling, John Taylor, 5, Compton-street, Bermondsey, silver medal and freedom of the Company.

The judges have probably taken circumstances into consideration of which we are ignorant, so that we should be wrong to question any part of their decision. We must confess, however, that one or two of the candidates who are not rewarded appear to us to deserve to be so, more than one or two who are.

There are some good specimens of graining and marbling, but of the higher sort of decorative work there is nothing. With reference to the specimen of Writing on Glass (No. 5), to which the silver medal and freedom of the company were awarded, it is to be regretted that the "Commandments" were made the subject, since the style adopted is as unecclesiastical as can be conceived. The writing and flourishing are very good of their sort, but then it is a horribly bad sort,—the Christmas piece and show-card sort.

The Company deserve warm praise for the movement. We went so fully into the subject on a previous occasion,* that we need not now recur to it.

PICTURES BOUGHT BY THE ART-UNION OF LONDON.

WORKS SELECTED BY PRIZEHOLDERS.

From the Royal Academy, up to this date.—The Hero of the Day, F. B. Barwell, 168*l.*; The Skylark, J. A. Houston, 105*l.*; Harvesting in the Vale of Conway, W. F. Witherington, R.A., 84*l.*; The Fair Persian, Robert Baker, 84*l.*; A Herring-boat off Scarborough, J. Meadows, 84*l.*; Building a Rick, F. W. Hulme, 40*l.*; The Stirrup Cup, A. Cooper, R.A., 31*l.* 10*s.*; The Trysting Place, F. Chester, 30*l.*; Fishing Vessels off the South Foreland, J. J. Wilson, 25*l.*; Duck Shooting, Abraham Cooper, R.A., 26*l.* 5*s.*; 'Mang the Braes of Balquhither, W. H. Paton, 21*l.*; Preparing for Dinner, J. M. Bowkett, 20*l.*; Fishing Smack, J. Meadows, sen., 18*l.* 18*s.*; A Windy Day on the Thames, E. C. Williams, 10*l.*; The Stream from Newlands, E. A. Pettitt, 10*l.*

From the Royal Scottish Academy.—Ruined Temples and Convent of La Madonna, George Pettitt, 100*l.*; A Quiet Pool, John Curdie, 25*l.*; On the Crawfurdland Water, John Curdie, 21*l.*

From the British Institution.—The Anxious Hour, Wm. Underhill, 100*l.*; Near Portmadoc, H. B. Willis, 40*l.*; The Stream from the Lake, H. J. Boddington, 30*l.*; An Arm of the Scheldt, A. Montague, 20*l.*; On the River Lleder, J. B. Smith, 20*l.*; Boarding a Trawler, W. H. Doust, 15*l.*; The Thames at Wargrave, H. B. Gray, 15*l.*; Lane Scene near Dover, J. Godet, 15*l.*; French Fishing-boat at Anchor, J. J. Wilson, 15*l.*; Left in Charge, A. Morris, 15*l.*; Drifting from Shore, H. Shirley, 15*l.* 15*s.*

From the Society of British Artists.—Market Day, E. J. Cobbett, 200*l.*; Evening on the Greta, H. J. Boddington, 75*l.*; Merchants encamping on the Desert, W. Luker, 60*l.*; St. Ives Pier and Harbour, G. Wolfe, 40*l.*; Happy Waltonians, G. A. Williams, 30*l.*; A Torrent near Dollgelly, H. J. Boddington, 30*l.*; The Muleteer, H. Weeks, jun., 30*l.*; Gipsy Group, W. Shayer, 30*l.*; Children and Rabbits, A. Provis, 30*l.*; On the River Lleder, J. B. Smith, 26*l.* 5*s.*; Park Entrance on a Misty Morning, J. B. Ladbrooke, 25*l.*; Mending the Net, W. Shayer, 25*l.*; Marazion Beach, G. Wolfe, 25*l.*; Salmon and Trout, H. L. Rolfe, 20*l.*; Evening View in North Wales, J. B. Smith, 20*l.*; On the River Clifton, E. Taylor, 20*l.*; A Blowing Day, A. Clint, 20*l.*; View of the Village of Callender, W. W. Gill, 18*l.*

From the Institution of Fine Arts.—The Harvest Field, S. Percy, 31*l.* 10*s.*;

Sometimes I let a sunbeam slip,
To light her shaded eye;
A second flutter'd round her lip,
Like a golden butterfly.
} C. J. Lewis, 30*l.*;

Harvest Scene near Clifton, B. Shipham, 25*l.*; Italian Peasant Girl, C. Nicholls, 25*l.*; Stepping Stones, F. W. Hulme, 25*l.*; Repose, J. C. Morris, 21*l.*; Rydal Water, Geo. Pettett, 20*l.*; Shipping off the Coast of Jersey, H. H. Taylor, 20*l.*; A Gipsy Summer Haunt, A. F. Rolfe, 22*l.* 10*s.*; A Mountain Tarn, S. R. Percy, 20*l.*; The Pass of Pont-Aber-Glaslyn, B. Rudge, 15*l.*; Scene on the Avon, H. B. Grey, 15*l.*

From the Old Water Colour Society.—In Harvest Time, O. Oakley, 52*l.* 10*s.*; Martigny, W. Callow, 20*l.*

From the New Water Colour Society.—Cape de la Heve, T. S. Robins, 30*l.*; Near Castel-a-Mare, J. L. Rowbotham, 30*l.*; Bouvignes, on the Meuse, Mrs. W. Oliver, 21*l.*; View of Goodrich Castle, Jas. Fahey, 15*l.*

ON THE REVIVAL OF STYLES.*

IF we are to consider the question between Gothic and Classic as a mere matter of taste (I mean arbitrary taste or fashion), we must bear in mind that this is notoriously liable to fluctuation. In the last century, Addison spoke of the greatness (as regards effect) of the Pantheon in contrast with the meanness of a Gothic cathedral; and, though it is not probable that the Gothic style will again be treated with the same contempt; yet it is by no means impossible that the relative estimation in which the two styles are now held will, in the course of time, be reversed.

What appears to me an insuperable obstacle to the general use of Gothic in the present day is that very quality which invests it with the greatest interest: I mean its expression of the tone of the particular period which witnessed its development, its culmination, and decline. And the restorer of Gothic seems to be liable to one of the following predicaments:—Either the style he produces is expressive of the thirteenth, fourteenth, and fifteenth centuries, and not of the nineteenth,—and then it is not Gothic, for Gothic is eminently expressive of the period in which it flourished; or his style is expressive of the nineteenth century,—and then it is not Gothic, for Gothic is expressive of the thirteenth, fourteenth, and fifteenth centuries; or his style has no expression at all,—and then it is not Gothic, for Gothic is an eminently expressive style. Nor do I see how he can escape from the dilemma, except by showing that the tone, spirit, character, state of civilization and refinement, and stage of progress of the present century are identical with that of the Mediæval period. If he can prove this, he will overthrow my argument; but I suspect that the more he studies Mediæval architecture, and the history to which it forms an adjunct and commentary, the more difficult he will find his task. And I believe this view of the subject has been taken by persons far more intimately acquainted with the matter than I can pretend to be.

It will perhaps be said that the same line of reasoning holds good with regard to all genuine architecture whatever. Unquestionably all great architectural works take their character from the period in which they were produced, and express it accordingly; but this may not be so much from the nature of the style itself, as from the manner of handling it. In Classic architecture, we can in great measure separate the style from the building. The style may in itself have no individual expression, while the building has a great deal.

* Vol. xviii., p. 357.

* By the Rev. J. L. Petit. See p. 350, *ante*.

In Mediæval architecture, the style itself is expressive; and therefore, if transported to a period to which it does not belong, it runs the risk of expressing something which does not exist to be expressed, and consequently of being anomalous and out of place. The Classic style, having no peculiar expression of its own, except that of refinement, may be endued by the architect with any expression his genius enables him to invest it with, and will readily receive and reflect the character of the age and people who adopt it.

Moreover, there is a greater affinity between our own age and country, and those in which ancient Classic architecture flourished, than between ourselves and our Mediæval ancestors. Our tastes in art and literature are nearly identical. Take any fair specimen of our literary style,—a leading article, for instance, in any established newspaper,—and we shall find in it the same excellences which we should look for in a good writer of the Augustan age;—clearness, force of expression, a happy choice of words, fluency, and harmony of rhythm, an avoidance of anything quaint or archaic, and an elegance resulting more from instinctive perception than from an elaborate selection and arrangement of our phrases: these are beauties which must be attained in a greater or less degree by every writer who intends to be read. And these are just the characteristics of good Classic Roman authors; so that we might introduce literally translated passages from Cicero, Sallust, or Cæsar, that shall altogether harmonize with our own natural style, and not appear in the slightest degree antiquated or obsolete. We read and enjoy Horace's odes, satires, and epistles as if they were productions of our own day and our own country: we like them for themselves, and not merely as curious relics of the past. Nor should we feel that any poet who might form his style upon the study of these compositions was taking a retrograde step. So in sculpture. The student who wishes to obtain eminence and to advance his art will exercise himself in copying, or carefully studying, the works of ancient Greek, Roman, and Renaissance artists; and, though he will not neglect Gothic sculpture, he will not make it the great object of his attention, nor look to it as a standard of excellence.

I am speaking of literary composition and sculpture as arts which may be communicated and advanced, and in which we can mark certain stages, whether of progress, culmination, or decline; and I believe I may say, without fear of contradiction, we are not making a retrograde movement while we set up classic models. Genius and inspiration may show themselves in any age, whatever be its state of refinement; nor can it fail of having an effect upon the progress of mankind; but we must not mistake the genius of an individual for national development. We should not look to Homeric Greece for a type of the Greek language in its completeness and purity; nor should we go back to the days of Giotto and the great Mediæval artists whose genius led up to the Renaissance for models of Italian art in its perfection.

But I must not dwell too long upon abstract points: we will take a more material view of the subject. The difference between the constructive principles of Classic and Gothic architecture is that the former professedly uses the beam or lintel; employing the arch rather as an expedient than as a predominant feature; while the latter may be said to be purely the architecture of the arch, admitting the lintel at rare intervals and on a small scale. But the artistical principles of the styles may be enunciated in a still broader and more summary manner. The Classic gives expression to the solids, Gothic to the voids. Take a Greek colonnade. The columns, capitals, and entablatures are carefully elaborated in their form and proportion, while the opening between them is left to itself, or its breadth determined upon with a view to the columns themselves, not to its own shape. In Gothic work, on the contrary, it is the form of the opening that engages the attention of the architects, the spandrils being the parts that in point of shape are left to shift for themselves. Hence the greater portion of classic ornament finds its place on the surface of the wall, while the soffits and jambs, unless the depth of the arch be such as to give it the character of a vault, are comparatively plain. In Gothic work the decoration is mainly in the soffits—sometimes in the form of delicate and complicated mouldings, sometimes of flowers and foliage occupying the hollows; while the mouldings themselves branch out into foliation and tracery, filling the arch with beautiful patterns and figures. Even in the decoration of the surface the forms of the openings are repeated in blank arcades and panelling; and the enrichment of the piers themselves has reference rather to arches they support, than to their own importance as solid masses, or to the actual wall above them. The tendency of the Gothic system, as carried out in its works of the highest order—that is, in its cathedrals—is to the construction, or at least the suggestion of a lantern of open-work,—a vast frame of stone, in which the portions of flat wall are reduced to the smallest amount possible, such as the choir of Tournay cathedral, which is so tender that it has been found necessary to connect every part together by ties of iron.

Now in Roman work the pier, or the wall itself, is made to attract attention, while the arch or opening, whatever it may be, is a secondary and subordinate feature. Change all the arches of the Coliseum into square-headed openings, as those in the upper stage, as well as at Pola, actually are, and I suspect the change in its character would be much less than we are apt to imagine.

Now, I am far from pronouncing the Gothic system to be wrong; and it is undoubtedly productive of great elegance, force, and spirit. But I would maintain that the classic principle of giving expression to the walls themselves, rather than to the openings by which they are pierced, is architecturally sound. We build for the sake of what we get by the walls and the roofs they support—namely, seclusion and shelter,—not for the sake of light and air, which we have in abundance without them. It is indeed necessary that we provide a sufficient supply of light and air, as well as means of access; but these are contingent necessities, not the main object of the building.

Again, the tendency of Classic is to breadth of effect; of Gothic to minute subdivisions, and an almost fantastic variety of outline. The traveller on the Continent will probably be struck, as he proceeds southwards, with the increasing breadth which characterizes the towns, villages, and groups of buildings. He cannot fail to notice the preponderance, so to speak, of mass over outline. In a Mediæval town in the north of France, and in the greatest part of Germany, his attention will be caught by the number and variety of towers, spires, pinnacles, peaked gables, and the like; on which great powers of design, as well as care, in the execution of detail, are bestowed, while the mass itself is as much broken up, as may be by openings and projections which cause a constant play of light and shadow. In the south, he will have presented to him large and comparatively unbroken masses, marked by few openings or projections, with just a sufficient number of towers and spires to relieve the monotony of the outline, and these not displaying that architectural care, or elaborate variety, which would make it suppose they were intended to catch the eye, or form principal features in the group. In sketching an Italian village, or monastery with its church, we need not care about marking out all its windows or putting them in their right places, or even giving to a nicety the form and proportions of the belfry, still less its details: in fact, the more slightly we define these, the more truly we shall give the character of the scene. Now, though these southern buildings and groups may be really in date just as Mediæval as the northern ones of which I have just spoken, they have more of the Classical character, which in Italy was retained in great measure through the whole of the Middle Ages: in fact, the composition of a large majority of Italian Gothic buildings, is such as to suggest no definite reason why Gothic details should have been employed in preference to Classical ones, so much does the horizontal line predominate. We may therefore fairly speak of this character of breadth as belonging to the Classic, and that of variety of outline and intricacy, or minute subdivision, as appertaining to the Gothic.

But although the classical style does not peremptorily demand that variety of outline which is so necessary a part of Gothic, it by no means discards it as incompatible with its principles. Many steeples of the revived Italian are as fine in proportion, and as elaborate in detail as any Gothic composition. I may instance the upper part of the tower of Seville cathedral, and many of Sir Christopher Wren's steeples, which show both the fertility of his imagination, and the comprehensive nature of the style he employed. I have, on a former occasion, adverted to the liability to decay incurred by the intricate and minute workmanship of Gothic ornament; and I understand that the condition of the ornamental details on the new houses of Parliament is not such as to induce me to retract what I then said. But I would further remark, that, although the constructive principles of the style are sound and good, so that, in many cases, the greatest amount of strength is obtained by a given quantity of material, yet the tendency on the part of the architect to make a display of mechanical science has been the cause of much real, as well as apparent weakness in important buildings. The lamentable fall of the Chichester steeple is, probably, to be attributed to the fault, not of construction, but of material. Yet, it is certain that the perilous boldness of many Gothic designs ensures more fearful results from the introduction of a defective piece of masonry, or unsound material, than are apt to occur in Classical buildings.

It may be said that the Gothic style can be worked in a broad and massive manner, as it was in castellated architecture; and to such an extent, that in adapting a Gothic castle, or an imitation of one, to domestic purposes, the difficulty is to avoid making the walls too solid, and the windows too few and contracted, for comfort. But this mode of building was forced upon the architect by necessity, not adopted by choice. The requirements of military architecture rendered necessary this expansion of wall, and contraction of window, and the builder dealt with it as he best could. The harmony which exists between the dark heavy fortress and the light open cathedral is a proof that both were designed in the natural style of the day, while the difficulty we feel in preserving the expression of the style in our domestic buildings, which require larger, and consequently more truly Gothic windows than the Mediæval castles, is a proof that it is not the natural style of our own period. But the less display the Gothic makes of constructive science, and the less aid it borrows from such additions as pinnacles, tracery, and the like, and the greater the breadth and solidity of its masses, by so much the further does it recede from its own principles, and approach nearer to Classic architecture. An adaptation of the style to our own exigences is not a development of it in its own proper direction, but an appropriation of some of the elements and characteristics of the rival style. We shall never develop Gothic further than it has already been developed, except by erecting buildings far less suited to our wants than Mediæval ones of the most exaggerated character. As it is, we seem to fancy that we can attain the life and vigour which constitutes the charm of the true Gothic, while we can only adapt it to our purposes by curtailing and cutting off the growth of many generations.

On the argument in favour of Gothic which rests on the superiority of decorated construction over constructed decoration, I cannot say much till I find myself better able than I am to comprehend the distinction. Is construction a term applied only to the more subtle contrivances of the architect, and not to a plain solid wall or pier, so that a mere wall enriched with surface ornaments is not a decorated construction? Are such pinnacles as those of Gloucester Cathedral and the Somersetshire churches, which are extremely beautiful in themselves, but in no way contribute to the strength or convenience of the building, decorated constructions, or constructed decorations? Which term should we apply to pinnacles engaged in the sides of towers, or to blank arcades and panelling? If a square-headed window in a classical front has over it a projecting ledge supported by brackets, and covered by a pediment forming a tympanum, I suppose this would be called a constructed decoration; at least, I should call it so. How, then, if a Gothic window has over it a label resting on heads or bosses, and crowned with an angular canopy, crocketed and terminated by a finial, a composition of constant occurrence in the finest work of the fourteenth century? Observe, the two compositions are perfectly analogous: it may be that the one is heavy and ugly, the other light and beautiful; but the principle is the same in both. I do not condemn surface ornament or constructed decoration in Gothic; only when it does occur, let it be called by its right name, and not ignored for the sake of a plausible, but somewhat fallacious argument.

We will now consider what ancient buildings are in existence, belonging to recognized styles, which suggest a mode of construction and arrangement applicable to our wants, and of decoration suitable to our best views of art.

If we look at the Parthenon of Athens, or the Temple of Neptune at Pæstum, we are impressed with its wonderful beauty, majesty, and sublimity; and as we acknowledge this to be the result of careful arrangement and adjustment of proportions, together with exquisite design shown in the simplest and smallest details, we cannot but treat with a certain degree of reverence the rules and principles which led to such a result; and, although we consider the plan of the building

itself unsuitable to our purposes, yet we feel that it is well worth our while to study it diligently, and think how we may turn to account the lesson we cannot fail to learn.

If we look at the Coliseum at Rome, and endeavour to forget the purpose for which it was erected, and the scenes which were enacted within its area, we must regard it as a work of almost unexampled magnificence, and at the same time admit that it presents a type of arrangement and ornamentation applicable to all tabulated structures whatever.

If, again, we look at a large Gothic cathedral,—say, for instance, Amiens, Chartres, or Rheims, or, in our own country, York, Lincoln, or Salisbury, we cannot but be astonished by the grandeur of its design, the mechanical skill displayed in its construction, the richness of ornament which is profusely spread over it, and the character of religious solemnity which pervades the whole. Yet we cannot help feeling that it is not a structure likely to be called for or produced in the present day. Its associations belong to an age more sharply and distinctly separated from our own than are even those of Pagan antiquity. Its principles of composition are not adapted, without some modification, even to the large churches we demand, and are rather opposed than otherwise to the conditions required by secular architecture. As records of one of the most interesting phases of art and social progress that it is possible to conceive, the Mediæval buildings of Europe are invaluable, independently of the practical lessons to be derived from them; and to preserve them we must keep them in repair, which we are not likely to do unless we make what use of them we can. Fortunately, most of them can be made available to our purposes to a certain extent, though in large towns it has often been found expedient to destroy the old church and build a new one of more commodious arrangement; while how to make the most of our cathedrals is a problem that has more than once puzzled their restorers.

The architects of the Classical revival, seeing that their style must necessarily prevail in secular buildings, wisely and rightly adapted it also to their ecclesiastical buildings, still without making any material alteration in their plan or structure. They cut off, indeed, some of their superfluous ornament, and reduced them to an aspect resembling the Romanesque, to which style, indeed, we might easily attribute many churches of the revival, if we see them at a distance, and with some we might fall into the mistake even on a closer inspection.

This leads us to enter a little more fully upon the subject of general outline. That the Greeks were keenly alive to the picturesque, and probably had a more refined notion of it than any race of men before or after, we have good reason to suppose. The instinct with which they selected the finest sites for their buildings, and the scrupulous care with which they avoided interfering with the natural features of their scenery, as though hardly a rock could be cut away without offending some deity who presided over it, shows with how deep a feeling they were actuated on this point: a glance at the Acropolis of Athens and the surrounding locality convinces us of this quality of the Greek mind, even if we did not infer it from their love of country, or had not learnt it from Homer, Æschylus, and Sophocles. It is most likely their buildings were designed not only to harmonize with, but to illustrate, as it were, the character of their scenery. Certainly the rock of the Acropolis and the Parthenon seem made for each other: we could not fancy the temple in any other spot; and the rock without the temple would be imperfect. But it is likely that their feeling of the picturesque was of too refined a nature to suggest that they should aim at what we call a striking outline: it may have taught them to prefer one that might have been chargeable with monotony but for some exquisite tact in its composition; and that such buildings as the Choragic monument, formerly known as the lantern of Demosthenes, ought to occupy some low and secluded spot, instead of contributing ostentatiously to the variety of the sky-line. Of course, I can only speak from conjecture, for we have not sufficient data on which to ground any theory on this subject. The massive forms, however, and long horizontal lines of their temples, indicate that they aimed at the expression of repose, rather than violent action, and this is confirmed by the character of their sculpture.

Neither have we the means of judging what views, with regard to outline, influenced the Roman architect. The beautiful monument of St. Remy, in Provence, shows that the power of producing good form existed: the monuments at Vienne, on the Rhone, and Igel, near Tr[illegible], are less remarkable for their beauty, though the latter is not wholly destitute of grace. The triumphal arches of the Romans hardly, I think, show the elegance of which such structures might be capable: that, however, of Trajan, on the pier of Ancona, is an exception. The magnificent arch at Orange is more remarkable for the profusion and delicate execution of its ornament, than for any excellence in its architectural design. At Athens there is an arch of Roman construction, I believe of Hadrian's date, of a lighter and more elegant design than the triumphal arches of Rome, but still of no very great beauty. Some of the Roman circular temples may have had a good outline, if the assumed restorations are at all true; and one at least we know to occupy as fine a site as can be imagined, and, in its present ruinous condition, to be well worthy of it: I mean the Sibyl's temple at Tivoli. The Pantheon at Rome can never have been a picturesque building. As antiquaries, we may regret the addition of the modern turrets flanking the porch, but in an artistic point of view they could ill be spared. The temple of Minerva Medica forms a very picturesque ruin, and may have been no less so when perfect, but I cannot help looking at this as a transitional specimen. In its use of buttresses, it forestalls one of the great principles of Gothic construction. On the whole, if we were to assume that the general outline of ancient Rome was less varied and interesting than that of modern Rome, and that the effect produced on the spectator would depend rather on masses of building occupying sites of different elevation, than on prominent architectural features, no one could easily find grounds on which to contradict the assumption. But the revivers of the style have taught us that it is fitted for an outline of the greatest beauty and sublimity, and capable of a picturesqueness of composition not surpassed in the best Mediæval period. And this shows that their work was really a revival, and not a mere formal reproduction. In tracing the development and progress of taste in the composition of outline, we shall advert chiefly to ecclesiastical architecture, because it affords us examples in greater number and in better preservation than any other kind; and also because it has less restricted art by mere economical or utilitarian considerations.

I am inclined to think that the circular churches, derived from Roman temples of the same form, are the first which exhibit that kind of outline which is produced by the central tower or dome, and which has characterized churches of the highest class ever since. The Eastern form, however, of the Greek cross, with the dome or tower at the intersection, is evidently a very early one, perhaps the earliest original form of a church that exists; for it does not appear to have been derived, like the basilica and round church, from Pagan structures.

The solution of the problem, how to adapt a spherical dome to a square area must have introduced a new era in architectural composition. The value of the dome had long been recognized as a method of roofing at once firm, permanent, economical, and beautiful; but, so far as we have means of knowing, it had hitherto been used only to cover buildings of a corresponding form, as the Pantheon. The cruciform plan seems also to have been introduced, to a certain degree, for the sake of convenience, into the Roman basilica, and its symbolical meaning would give it an additional recommendation in the eyes of the early Christians; but the roof throughout being generally flat, the square of intersection would be treated in the same way as the arms or aisles of the building, and neither receive nor suggest any additional height, externally or internally. When, however, it was resolved to take advantage of the domical method in roofing the square of intersection, making the other roofs of the building cylindrical or semidomical, according as the limbs of the cross were rectangular or apsidal, then, since the base of the dome had to rest by means of pendentives on the crown of the four arches, its apex necessarily exceeded them in height, and consequently rose above the vaultings, supposing them to correspond with the arches of intersection. This is true, not only when the dome is a complete hemisphere supported by pendentives, but also where it is a part of the same hemisphere to which the pendentives themselves belong, or any other segment of a sphere whatever. Hence the adaptation of a dome to the square of intersection in a cross church requires a superstructure raised higher than the arches, and consequently suggests one raised higher than the walls and roofs, both externally and internally.

Probably S. Sophia in Constantinople was not the first example of a dome resting on four arches; so bold an experiment could hardly have been tried on so large a scale for the first time. Many of the domical churches in the eastern parts of Europe are small in their dimensions, and have no architectural detail but what might be of considerable antiquity. If we cannot confidently pronounce any particular specimen to be of a date earlier than the reign of Justinian, we cannot positively deny the existence of such at the present day, and I think we may at least assume that those to which we now have access are fair representatives of some of the earliest original Christian structures ever designed.

S. Sophia is somewhat unique among Byzantine churches, and has rather the character of the mosques which surround it, and which were built after its pattern, than of the churches generally erected in the East at that time and for many succeeding centuries. S. Irene, now converted into an armory, is the next in size to S. Sophia of those in Constantinople, but very much inferior in dimensions, the diameter of the dome being, if I remember right, less than one-third. I cannot tell how far the present outline is original; it is perhaps the more pleasing of the two. The outlines of some of the old Greek churches in Constantinople, and in and about Athens are extremely graceful, I may say noble, as giving to structures small in actual scale, an air of dignity and importance. The central dome assumes the form of a circular or polygonal tower, of some elevation, and there is a certain breadth about the composition which prevents any idea of meanness. The actual ground-plan is square, but the upper stage from which the dome or tower rises, is a Greek cross. To the westward is a narthex or porch, which is sometimes covered with another dome, lower than the principal one. The pendentives supporting the dome required themselves the support, abutment, and protection of the walls above the springs and haunches of the arches on which they rested, and by raising these walls above the crown of the arches additional strength was given, and the whole fabric consolidated. Hence the round or polygonal drum of the dome mostly stands upon a square base, slightly raised above the level of the other walls; and when the central dome was adopted, as it soon was, in the western church, at the intersection of a Latin cross, the square base often became a square tower, enclosing within itself a circular or polygonal dome, which then formed only an internal feature. This is an arrangement which prevails through the whole of the south of France, and in parts of the central and more northern orovinces. In Italy the central tower is generally a low octagon. As a satisfactory outline was thus obtained, the central tower was used even when no dome or lantern was shown internally.

If a campanile was required, this was provided, not by raising the central lantern to the requisite height, but by building an independent tower, as in the basilican churches. The combination of the central lantern with the belfry tower produces some of the finest and most picturesque effects of outline in ecclesiastical architecture. Such combinations are mostly to be found in the Romanesque period. I think we meet with them more often in Italy than in France, where the central tower first attained sufficient height to cover the lantern, and afterwards grew still higher, and became the highest and principal steeple in the church. Whether this was an improvement, is a matter of taste. For my own part, I am very partial to a fine central tower or spire, but I am not certain whether, on true architectural principles, we ought not to prefer the low massive lantern of the Italian Romanesque, combined with the taller and more slender campanile; the central lantern giving by its breadth dignity to the most important part of the building, namely, the intersection of the cross, and the lofty tower giving the same feature value by its contrast, and breaking the monotony of outline. Add to which, the arrangement is evidently a good one as regards convenience, by detaching the belfry from the area of the church, and allowing walls of any degree of massiveness that may be required. The cathedrals of Piacenza and Parma, the cathedral and another church at Asti, many of the churches in and near Pavia and Milan, and the cathedral of Monza, present fine examples of the above arrangement: some of these are later than the Romanesque era, but retain in great measure the general character of the style. In England we have unfortunately so little unmixed and unaltered Romanesque, or as I would rather call it, Norman, that it is difficult even to imagine a typical example, and such buildings as Tewkesbury, Southwell, and Romsey, show how grand

must have been the outline of a perfect English church of the first class in that period. But Normandy furnishes us with better preserved examples of the style from which we may form an estimate of its general aspect and character. The well-known church of St. George, Bocherville is, I believe, as pure a specimen as can be found, and its outline, simple as it is, seems to admit of no improvement. It may be questioned whether the present wooden spire agrees with the original design; I am, however, speaking of the building so far as the actual masonry and the necessary roofs are concerned. I question whether the development of the Pointed Gothic really improved upon the best outlines exhibited in the Romanesque. We certainly gave greater height, and varied, perhaps confused, the general outline of the building by pinnacles and buttresses. Where the central tower was retained, it was frequently raised to a much greater height than its use as a lantern rendered necessary. The central tower of York, which is open nearly to the top, is an exceptional instance, rather than a type of Gothic central towers, and is unquestionably one of the finest, if not the very finest, in existence. And it is certainly one of those that are least removed from the Romanesque model.

Again, on the Continent, the central tower was altogether sacrificed to the attainment of height in the whole building itself, which, in consequence, often appeared rather a shapeless mass than a fine architectural composition. The profusion of pinnacles employed seems rather intended to disguise the want of design, than to mark, as they ought to do, important points and divisions. Some of the best outlines in Normandy, comprehending the low central tower, and loftier, but less massive western ones, though Gothic in detail, as that of Lisieux, are wholly Romanesque in character, and those which assume more of the Gothic are not improvements: the heightening of the English central steeple, though the effect resulting from it is sometimes extremely beautiful, as at Salisbury, is seldom carried out without some sacrifice as regards internal arrangement or actual security. I am quite aware that we find many ugly buildings, and many buildings of a fantastic outline, that belong to the Romanesque period. In Germany, and even in France, I could point out both one and the other; but it is certain that in that period a very beautiful type of composition appeared, the simplicity of which, and its independence of additional ornament, stamps it with a degree of refinement which is scarcely preserved in the more advanced stages of Mediæval architecture, when features of mere decoration became abundant. The best architects of the *renaissance* evidently felt this, and in their ecclesiastical structures, for which they found no available precedent in ancient classical architecture, they returned to this Romanesque type, and in a short space of time a large number of churches were erected, showing a full appreciation of those early models. Many would, at a short distance, be taken for buildings of a date anterior to the thirteenth century. The cathedral of Dax, south of Bordeaux, would, at first sight, be pronounced Romanesque: it is, in fact, Revived Italian, except an incomplete Gothic tower at the west end. At a village between Epernay and Reims I noticed a church at a distance, which I made sure of as a fine Romanesque specimen. On examining it, I found it clearly post-Gothic. I may have been disappointed at the time, but it now proves valuable to me as an example.

When I had the honour of reading a paper at the South Kensington Museum, rather more than a year ago, I showed some drawings of Spanish churches in the Revived Italian style, whose general outline had altogether a Romanesque character. I am still of opinion that these churches might be studied to advantage in the present day, as securing really fine architectural features at little or no sacrifice of convenience, and at no exorbitant expense. In Italy the combination of the low lantern tower with the lofty campanile, was continually reproduced; and still further grandeur was obtained by expanding the central lantern into a spacious dome, which became the predominant feature both externally and internally. Such domes had indeed been more than suggested by the early Byzantine and circular churches, but the revivers of classic art worked them out with an elaborate care in regard to proportion, and often with a success which almost reminds us of the elaboration of the column in Greece. That of St. Peter's, as it is the largest, is, to my mind, the finest example that can be brought forward. I have endeavoured to procure a tolerably true outline, comparing my own sketch with an engraving that appeared to me a very exact architectural elevation, and making corrections accordingly. Many prints and drawings make it too round and heavy, and most of the photographs I have seen are taken from a point that does not show it to the best advantage. But though St. Peter's is the finest example, it is but one out of a vast number, which exhibit a great variety of forms and proportions, nearly all of them pleasing to the eye, and giving quite as much character to the Italian landscape as the Gothic tower or spire does to the English.

Had the dome been congenial to the Gothic, it would surely have been introduced in that style, a style which certainly is not chargeable with timidity in adopting new forms and combinations. The arrangement of the central part of Ely Cathedral offered opportunity for its adoption. Yet we find an octagon, with a Gothic vaulting adapted to it, in the best way the architect could devise, and that architect was one of more than ordinary fertility of resource.

Without for a moment depreciating the grandeur of a fine Gothic interior, I must observe that the Classic style contains elements of at least equal grandeur, if not greater. The churches of St. Andrea in Mantua, St. Justina, and the cathedral in Padua, are not inferior in solemnity of effect, to any Gothic edifice whatever. Had St. Paul's been carried out according to the design preserved by the model, I can conceive no interior that would have been equal to it. An impression of vastness would have been produced by means totally opposite to those employed in Gothic; and, to judge from the model, even more effective, while the variety of perspective views, and the fine alternation of light and shade in broad masses, would have given a picturesqueness scarcely rivalled in the eminently picturesque Mediæval styles. If I am right in believing that there is a picturesqueness of repose as well as of action, a picturesqueness depending rather on breadth and mass than on intricacy and multiplicity of parts, then I cannot be wrong in asserting that the Classic may meet the Gothic even on its own ground, on at least equal terms.

Still, if constructive considerations should render a pointed arch desirable under any circumstances, its admission does not necessarily involve that of the whole Gothic system. The pointed arch was used before Gothic was developed, and in localities which were the last to receive the Gothic style. Saracenic architecture has the pointed arch, but it is not Gothic, neither are those domical buildings in Aquitania which employ the pointed arch, without an approach to Gothic mouldings, in the support of their pendentives. But even supposing the pointed arch to have belonged exclusively to the Gothic, we may borrow it if we really want it, without professing to revive the style. It is not an architecture to pass away without influencing any succeeding style: we are not obliged to choose between accepting all or none. There is one very important element of Gothic which we should be foolish to reject, and of which, if I mistake not, the Renaissance architects saw the value, and by its means considerably modified the rigidity which might have resulted from a strict imitation of the ancient Classic: I mean, the oblique surface of decoration. The use of this much facilitates the enrichments of our buildings, while we exclude heavy and incongruous ornament, and enables us to retain such beauties of Gothic sculpture as are not inconsistent with a more severe and refined style.

As, in advocating the revived Classical style, I would not urge the rejection of everything which belongs to the Gothic, still less am I anxious to defend the glaring defects which characterise so many specimens of the Classic. I would not perpetuate the cold formality of most of our professed imitations of the Greek, nor the feeble, unmeaning, uninteresting character which prevails in so much of our work that claims a derivation from the Roman. But a discussion upon the defects that may be enumerated in Classical buildings, and upon the causes which, independently of Mediæval sentiment, have tended to bring the Classical style into disrepute, would occupy a great length of time, and I am not sufficiently master of the subject to enter fully into it. I believe, however, the greatest defects in the style are of a superficial character, and admit of removal. By clearing them away we shall give it a vitality and vigour which its evident congruity with the practical spirit of the age cannot fail to preserve; while the consistent stability of its nature, the very reverse of that restless tendency to change which is one of the essential elements of Gothic, will make it a permanently effective style, at least till the present conditions of society become altogether changed.

PROPOSED PORTRAIT OF THE LATE PRESIDENT OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE Council have nominated the following gentlemen as a committee for obtaining a portrait of C. R. Cockerell, esq., R.A., to be placed in the rooms of the Institute, and for presenting to him an address, on his retirement from the office of president:—

The President of the Institute (chairman); the three Vice-Presidents; the Hon. Secretaries; of the Council, Messrs. B. Ferrey and C. C. Nelson; Royal Academicians, Messrs. P. Hardwick and S. Smirke; Fellows of the Institute, Messrs. A. Ashpitel, G. Godwin, W. Papworth, and J. P. Seddon; Honorary Fellow, Mr. A. J. B. Beresford Hope (treasurer); Hon. Member, the Rev. R. Burgess; Contributing Visitors, Messrs. H. Twining and J. W. Fraser; Asssociates, Messrs. G. Enoch and T. Roger Smith; and Mr. Robert Kerr, hon. secretary to the Committee.

IMPROVEMENTS IN DWELLINGS.

IN an article entitled "Modern Luxury," which appeared in the *Cornhill Magazine* lately, is shown how much of the utility and comfort of life is sacrificed to what are the orthodox luxuries and ways of modern custom.

I have often thought that it is rather hard the scientific poor, if I may so express myself, should be deprived of the essentials of health and true life, in order that the ridiculous purposes of fashion — for there are fashions of high life, fashions of low life—may be subserved.

Pour exemple:—"Do not use the bright poker," says my lady, in middle life. "Be content with ill-cooked chop on cold plate," says lower life, rather than that science should teach the crinolined partners of the lower estates of society (every woman has her hoop), that all is not *fit* which is *orthodox*.

Soyer showed us all how much better it is to take a metal dish, with a chop upon it, and cook it over a *gauze*-fitted smokeless gas-burner; on another burner to friz, or to boil, "pommes de terre," than to worry the dame below-stairs to do and dirty a great many things, badly, and out of all time.

The dear old "duke" said,—"He who wants a matter done must do it himself." How true this is, to be sure; all through the world, even with shirt-buttons, airing clothes, &c. Now, what is wanted as an axiom in modern residences for poor bachelors, and poor married folk with their 100*l.* or 150*l.* a-year, is such an order of construction, and of affairs and details, that each man, or dainty fingered, large-skirted Eve, may be his or her own servant, if he or she so please.

It is a fact that, now-a-days, servants are most difficult to procure. Government gave "free passage" to "household servants of *good* character;" this at a time when there were not enough already for our household gods. I met a gentleman who was too late to an appointment: he excused himself (a few days since) with,—"I have been after eight characters, and failed, to get a cook." Sir, many a lady is compelled, rather than single cursedness, to marry such a poor literary or inventive stick as may be the writer of this; well, it is rather hard that our modern builders and architects do not yet see how, much more than they do, they could assist the Eves of the great English human family.

What can be more unscientific than our average ranges and fire-grates; our dust and soot, and clamped walls-end and ashes; the transport of hot water and cold from basement to garret; the transport (not of delight) of the *washings* up and down stairs—carpeted stairs?

With regard to sound too. Our modern buildings are so made that the literary man or artist, or brainworker of any kind, cannot get out of hearing of the baby-cry. "McFlimsie," in last week's *Punch*, begs "Maria" to keep the child quiet in the other room. This is all part of our modern system of discomfort, which does not enable the brain-worker, who is poor, to fence himself off, *during his brain-work*, from the rest of his family. In winter he must ask for fire, or water, or cooking. He is dependent on others. But modern science should make things so easy, that bachelor or Benedict could be independent, in the meanest dwelling, of others, for fire, water, cleanliness, or cooking.

This may sound outrageous to some creatures of habit; utopian to others who are slaves to petticoat tyranny; but, as I said in my last, with gas in sound pipes and joints to insure health; with self-relieving hearths, emptying out their own

dust behind, with a sliding contrivance; with water and enamelled sinks and baths; with enamelled cooking-ware and smokeless flame; with horsehair and leather (*qy.* Nicholas, of Russia) *versus* what Miss Nightingale justly denominates "putrescent feathers in frowsy cotton cases;" with ventilation at pleasure, and even a coal fire (or its asbestos semblance) at will; each bachelor may, his own servant, be best served;—"monarch of all he surveys," none disputing his right, no perspiring charwoman or quasi-voluptuous chamber wench disturbing the "serenity of fancy."

The architects and builders of England must rightly appreciate what is wanted to make homes happy, to prevent premature marriage, to fly from thrice-cursed charwoman bachelorhood, to prevent the social evil by marriage, rendered *terrible* in consequence of modern follies, rendering small incomes useless as producing no health, no quiet, no cleanliness, no comfort.

Our rooms are heaped with useless furniture, and spread with nailed-down carpets. Better by far than this was even the jocund fire, and rushes, and broad hobs, and sink, and rafters, and hearthstones, and chattels hung aloft, of Teniers, Hogarth, and Wilkie.

In your last there is a letter about "Furnished Lodgings." If, sir, anything is contemplated on the "*model*" plan of this kind, let true comforts be considered,—air, quiet, water, aspect, economy of labour to the resident male and female.

Our modern washing apparatuses, Yankee knife-cleaning contrivances, household roller mangles, gas-warmers, boilers, broilers, roasters, bakers; our enamelled sinks (see your advertisement sheet), and utensils; our cleanly kamptulicon floor-cloth *versus* dust-devouring carpets on stairs, &c.; our aërated—not bread but—*bricks;* our Arnott's ventilators (there are no better); our iron bedsteads (anti-flea as they are); our delicious, wholesome mattresses of horsehair, cocoa-fibre, cork, jute *versus* unwholesome wool; these and many other triumphs of plodding ingenuity and diligence are at hand for the architect to specify, prescribe, or advise. There are many as useful, which are *too slowly* struggling into light of day. But to use all these items beneficially we must reform, and first point out, and first *feel* before we can *reform*, our modern systems, our orthodoxies, our customs in-doors and out of doors, so that the architect's labours may be appreciated, and poor young men and poor young women, whether married or single, may be more truly their own masters of food and cleanliness, and comfort in their own homes. Every man's house is his castle. Those who come home tired and sorrow-stricken, wounded in battle of life, want household necessaries to their hand, bath to their hand, cooking to their hand.

Let a man, *if he so please*, wash and feed before he meets his better half (often the worser half): then there will be fewer cases for the Divorce Court. Let each man know, who is a Benedict, that one room at least is a castle to him; that he need not necessarily seek the kitchen if his wife is querulous or washing. I mean no bad compliment to wives or maids; but, in modern homes of the poor or ill paid, bachelors and Benedicts alike are worse served of all, because, *nolens volens*, obliged to be served by others. W. RIDDLE.

DINNER TO THE ROYAL ACADEMY AND THE ROYAL SOCIETY.

THE Lord Mayor and the Lady Mayoress invited a distinguished party to meet the Council of the Royal Society and the Council of the Royal Academy, on Saturday evening last. Nearly 300 persons were present.

The Lord Mayor, in proposing the toasts of "The President and Council of the Royal Society" and "The President and Council of the Royal Academy," alluded to the prodigious strides which science had made, the discoveries that had been brought to light, and the new means and appliances which had been invented during the present century. They were such, he added, as our forefathers could hardly have conceived to be within the grasp of the human intellect; and if any one had ventured, half a century ago, to predict results in science which had since been actually achieved, he would have been scouted as a visionary or a madman in ascribing to the human mind attributes and powers altogether supernatural. His lordship also alluded in complimentary terms to the progress of art, as attested from time to time by the exhibitions of the Royal Academy and kindred societies. It was a proud day for him to have collected at his table so many men renowned in the departments of science and art; and he felt that no act of his mayoralty would afford greater satisfaction to his fellow-citizens.

Major-General Sabine responded to the compliment on the part of the Royal Society; remarking on the pleasure they had in revisiting the city of London; where, for half a century after its commencement, its members held their weekly meetings, by favour of the trustees of Gresham College, in an apartment belonging to that body. Since that time, for the last century and a half, the Royal Society had pursued "the noiseless tenor of its way;" holding, in the western part of the town, periodical meetings for the advancement of science, and publishing from time to time its well-known volume of "Philosophical Transactions," which had been long regarded as the national record on such subjects. Such public services, he added, were in other countries usually performed at the expense and under the authority of the State; but, conformably with our habits, were here discharged by voluntary association. He adverted with pleasure to the feelings of mutual regard which had always obtained between the members of the Royal Society and the Royal Academy; and he expressed the acknowledgements of his colleagues and himself in being included among the guests of that festive occasion.

Sir C. Eastlake, in replying on the part of the Royal Academy, said that assembly was a gratifying proof of the estimation in which the arts were held in an enlightened community like the City of London. It was not because the fine arts were connected with commerce that they were held in such high estimation; but, as he was persuaded, on account of their higher recommendations as auxiliaries to education, and as offering to all, by their universal language, the means either of instruction or rational enjoyment. Of the readiness of the civic authorities to encourage the fine arts they had ample proof in that hall, with the admirable productions of sculpture which adorned it, and to which, he was happy to learn, other specimens were about to be added. A few weeks since he took occasion to observe—not on his own authority, but repeating what he believed was the general opinion—that a great improvement had taken place of late years in the street architecture of the city of London, and that it combined in many instances objects of public utility with the requisites of taste. He held an opinion on that subject different, perhaps, from that entertained by most other persons. It was, that solid and handsome buildings, even in irregular array, were more picturesque than those interminable, monotonous lines which were sometimes admired in foreign cities. The very difficulties of site occasionally resulted in novel and beautiful arrangements which were not attainable under other circumstances. It was formerly said that the merchant princes of the city of London were so absorbed in the pursuits and cares of commerce that they showed little consideration for the fine arts; but the history of that and other capitals and their own personal experience sufficiently refuted that assertion. In those countries and cities where commerce flourished a love of the fine arts was the invariable accompaniment of that elegance and refinement of life which were there witnessed. His own early associations were connected with the most agreeable recollections of a genuine taste for art among the merchants of London. The first choice collection of pictures and drawings by the old masters with which he had the happiness to be familiar—he spoke of half a century ago—was in the possession of Mr. Jeremiah Harman, at his house in Old Broad-street, which was the scene of many delightful evenings to some of the most distinguished connoisseurs of the metropolis of that day. Thus, from individual and grateful recollections, and from general observation, he was ever prepared to uphold the taste and love of art which characterised the citizens of London.

The Lord Mayor, when he gave "The Literature of England," coupled with the toast the name of Earl Stanhope.

Earl Stanhope said he was sure he spoke the sentiments of those whose healths they had just drunk, when he said that it was with great gratification they found themselves associated that evening with the chosen representatives of science and art. It was that combination of science and art, and the spirit and liberality of municipal bodies, which had done such great things in former times. It was a combination which was extinct in the last century, but it prevailed in the Middle Ages, and was the means of raising such magnificent ecclesiastical buildings as those they saw at Strasburg, or such splendid public edifices as they admired at Louvain and Bruges. This combination, which he hoped would be revived in the present day, and which, as it existed in the Middle Ages, had produced those immortal works of art, was far more laudable than the indifference to science and art which in the last century was too often seen. Then the men who raised splendid edifices were often themselves content to dwell in humble abodes, whereas, in the last century, the wealthy thought no degree of comfort or luxury too great for themselves; while they took no interest in the erection of adequate and beautiful public buildings. A better spirit now prevailed in this country; and it was evidenced by the appearance of that noble hall, to which the Lord Mayor of the greatest city in the world had invited men eminent in the arts and sciences, and other branches of intellectual pursuits, to partake of his hospitality.

The toast of "The Literary and Scientific Societies" was acknowledged by Sir R. Murchison.

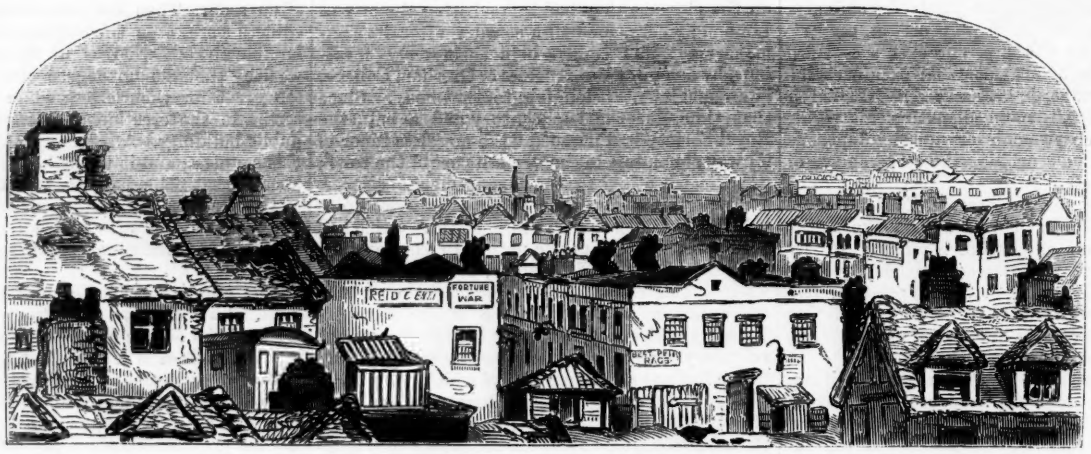
The Lord Mayor proposed in appropriate terms "The Health of M. Fould;" who, he said, had been for many years the prime minister of the Emperor of the French, and who was not only a great statesman of France, but one who had long been at the head of the government department which had the control of all the scientific institutions of that vast empire.

M. Fould, in the course of his reply, said,—I find, at the present moment, two guarantees for the continuance of peace: the one is the treaty of commerce, which will render the connection between the two countries more intimate and enduring. That is an event which will best illustrate the glorious reigns of your gracious Queen and of my sovereign. Another ground for believing in the continuance of peace is that Universal Exhibition which is preparing in London for next year. We, in France, have accepted eagerly the invitation which has been given to us, and we shall endeavour to win as much as we can in the peaceful contest. That great display of the productions of human intelligence and labour can only be conducive to trade and industry, which are the surest guarantee for peace.

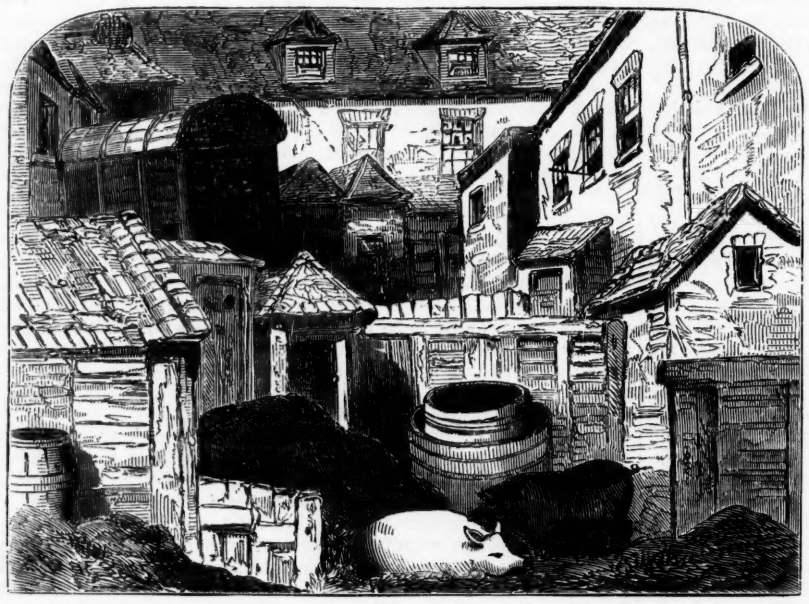
TELEGRAPHIC.

THE stretching of telegraphic wires across the tops of houses and streets is exciting some stir in provincial towns. The *Birmingham Gazette* says, on this subject, — "We cannot admit the right of any company [the United Kingdom Electric Telegraph Company is more particularly referred to] to use the streets of Birmingham at its pleasure, without at least applying for permission to do so. Nor will the evil stop here. The Magnetic Telegraph Company are not unlikely to ask permission to bring their wires through the town; and they propose to follow the example of their competitor by stretching their line from house to house across the street. If the Electric Telegraph Company should adopt the same course, some of the principal streets will present the appearance of sheets of copy paper, ruled with anything but faint lines. The disfigurement is, however, by no means the only objection. Telegraph wires not unfrequently break; and so great is the tension to which they are subjected, that if a line were to snap, the falling fragments would seriously injure and probably kill any passenger whom they might strike." In the Banbury Board of Health, too, the subject has been exciting some discussion.——*Le Monde Illustre* gives an illustration and a lengthy notice of Professor Hughes's letter-printing telegraph, an invention which was brought prominently, two years ago, under the notice of English telegraph engineers. Professor Hughes, it appears, has exhibited the working of his instrument in the presence of the Emperor, who "recognised its advantages," and the Administration of Telegraphs is, it is stated, in treaty with the inventor for the application of his system. M. Bergon, Le Directeur Divisionnaire des Lignes Télégraphiques Françaises, has made a report, according to the London *Engineer*, very favourable to the printing telegraph; the sufficiency of its arrangement for securing synchronous action being dwelt upon, as also the low battery power, and the great rapidity with which the instrument may be worked. The printing telegraph, it is further stated, has been worked successfully on the longest French line, that between Paris and Marseilles, about 500 miles in length, without relays. The rate of transmission was about double that by the Morse system; and it was expected that, when the operators became better practised, a speed of from 2,000 to 2,500 unabbreviated words per hour would be attained, as has already been done in America, where the Hughes's instruments are in extensive use.

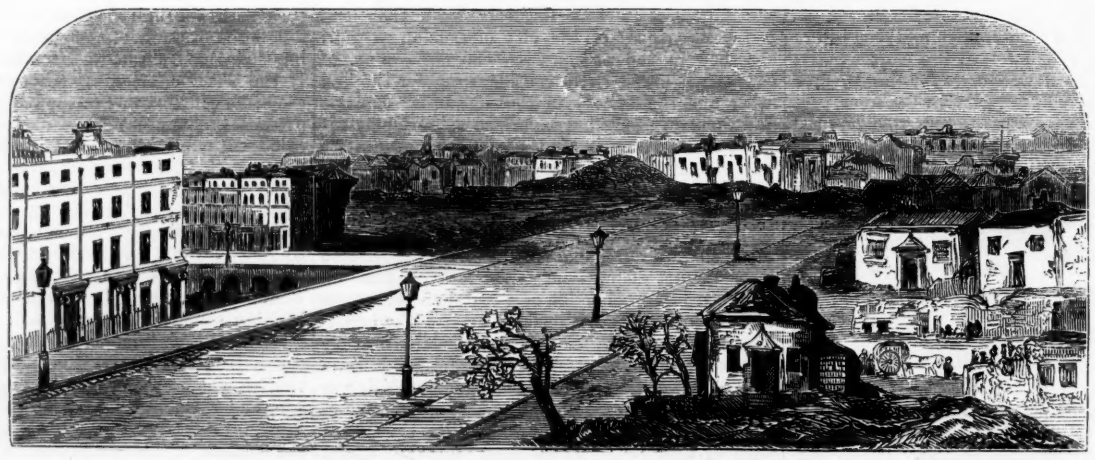
SKETCHES IN THE EAST OF LONDON.*



House-tops from the Railway.



"Pleasant Place," New Square. Pretty Lodgings,—for Pigs.



Opening the Way and letting in the Light.

[* See p. 365, *ante*.

THE GROSVENOR HOTEL, PIMLICO.

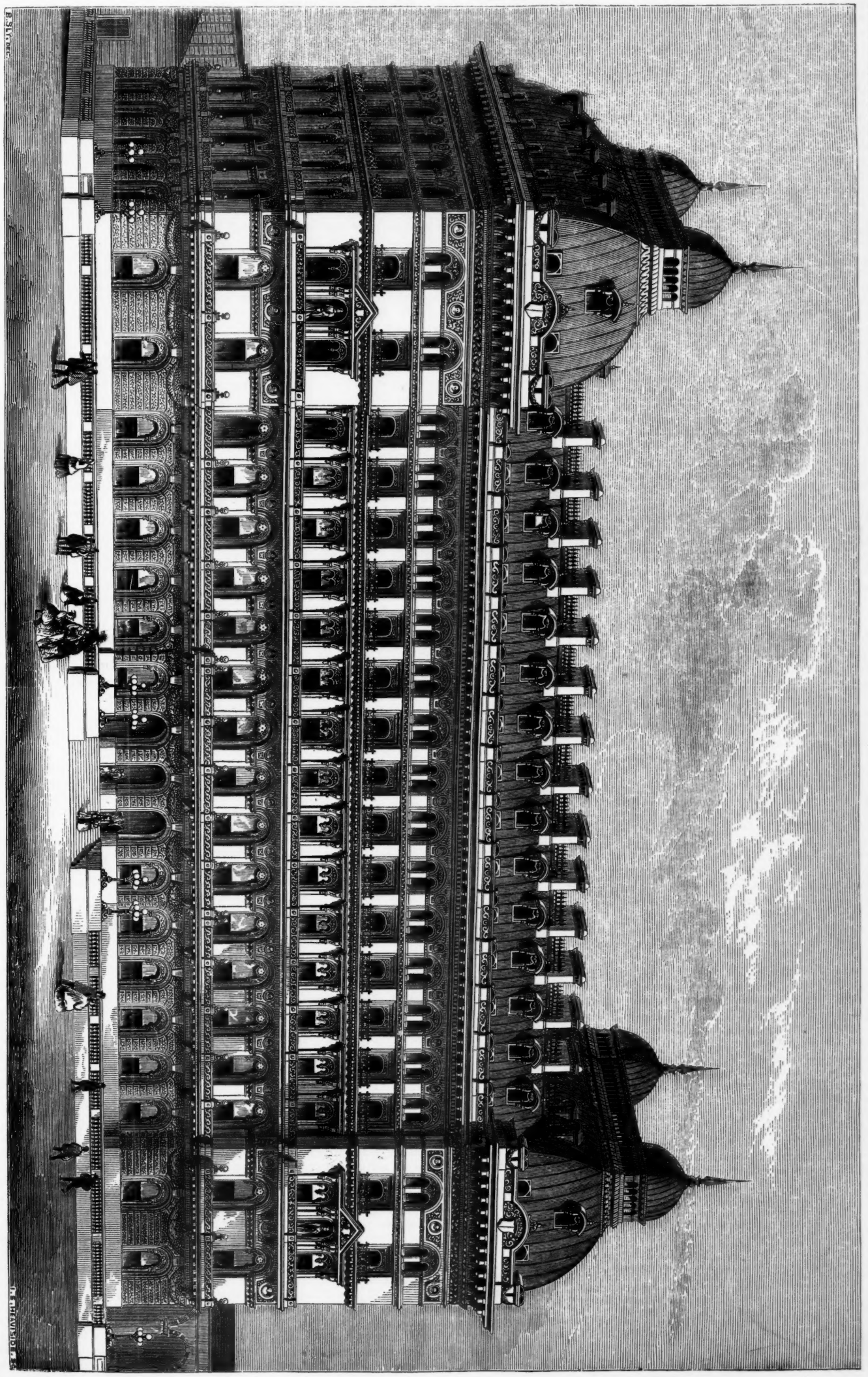
IN our last volume* some particulars were given of the large and handsome hotel which is in course of erection by Mr. Kelk, from the designs of Mr. J. T. Knowles, architect, close to the Victoria Terminus of the Brighton Railway, with which, indeed, it directly communicates.

The building is now more nearly completed externally, and towers grandly over the adjacent houses. The accompanying view represents the road front; but, from the smallness of the scale, scarcely conveys a complete idea of the amount of carving and decorative cast work which the exterior presents. The carved heads seen in the spandrils on the first floor are in Portland stone, and represent various well-known persons;—her Majesty the Queen, the Prince Consort, Humboldt, Lord Palmerston, Lord Derby, Lord John Russell, and others. The enriched imposts, the perforated window hoods, and the lower balcony, are of bath and other stone. The enriched string, the trusses, and the leafage, are of Portland cement, coloured while "green," to match the stone. The carving was executed by Mr. Dayman, and is for the most part very satisfactory.

The main frontage is 262 feet; the side frontage, 75 feet. The height, to the highest part of the roof of the wings, is about 150 feet. The coffee-room is 69 feet by 36 feet, and 18 feet in height. The chimneys are all finished with Mr. John Billing's terra-cotta terminals, and will have his iron regulating "throat valves," instead of register doors. Moreover, every stove is supplied with air separately and directly from the exterior, with regulating valves. By these arrangements it is expected that every apartment will be wholly free from all the usual annoyances of smoke and back smoke. The apparatus also affords a system of ventilation for each respective apartment. It is stated that the expenses of these important, but hitherto much neglected details, when included in the contract, scarcely, if at all, exceed the cost of the ordinary modes of fitting chimneys with stoves, chimney-pots, &c.

The hall will be enriched with scagliola columns, and promises to be very handsome. The works are at present retarded by the unfortunate differences between masters and men.

* Vol. xviii., p. 755.



THE GROSVENOR HOTEL, PIMLICO.—MR. J. T. KNOWLES, ARCHITECT.

GLASS AND ITS DECORATION, WITH PHOTOGRAPHS IN ENAMEL COLOURS.

ON the 22nd ult. Mr. F. Joubert read, at the Society of Arts, the following paper, "On a new Method of producing on Glass Photographs or other Pictures, in Enamel Colours."

Of all the inventions to which the genius of man has given birth, and which have been progressively developed and brought, by his industry, to a high degree of perfection and usefulness, the art of glass-making is certainly one of the most interesting and extraordinary; at the same time as it is doubtless one which has tended to increase our comforts and our enjoyments in a degree almost unequalled by any other discovery of modern civilization.

If we look back to the dark ages, and find that in those days even the rulers of the earth had no means of keeping rain and bad weather from their habitations, except by also shutting out the light; we shall be ready to acknowledge the astonishing results, as compared with the present state of things around us, which the persevering efforts of man have, under the guidance of an ever-merciful Providence, been able to accomplish.

Before entering into the description of the process which is more immediately the subject of our meeting this evening, I would, in a concise manner, and, as far as the necessarily limited time I have to occupy this place will allow me, recapitulate the history and progress of the invention of glass itself, and of glass painting which has led to the process before us.

We have no distinct evidence to show what nation first used glass, and we must therefore be satisfied with the various traditions transmitted to us, from age to age, on the subject. One fact, however, seems established beyond the possibility of a doubt, viz., that the greatest antiquity can be assigned to this invention, since the Egyptians and the Phœnicians had both vessels and ornaments made of glass, crude in form, but of a substance so perfect, by whatever means obtained, that it has stood the trial of several thousand years, and may be pronounced to have suffered no deterioration. Might we not, in consequence, assign to glass a place in the list of useful inventions far higher than that which it occupies? for in this we have a discovery, the first inventors of which seem to have attained, at once, the very condition—durability—which humankind is incessantly bent upon obtaining for any produce of its hands.

But still more remote is the mention of glass in the Holy Scripture; for, if the interpretation of the text be a correct one, in the 18th chapter of Job, as also in several other parts of the Bible, is found an allusion to a substance which we imagine must have been glass. Next to this, Alexander Aphrodisius amongst the ancient Greeks, Lucretius, Flavius Vopiscus, and other Latin authors, have left us a correct description of glass. Aristophanes also alludes to glass in one of his plays, and Aristotle brings out two problems on the subject; the first, why is it we see through glass? the second, why can we not bend glass?

Admitting that these two propositions emanate from the celebrated philosopher, they appear to give conclusive evidence that glass was familiar to the Greeks.

But we may, perhaps, even trace the origin of this invention far earlier, and to the remotest period of the existence of man, by associating it with the art of making bricks, which was, it is believed, practised by the earliest inhabitants of the earth; and it is not difficult to imagine how such an art would originate.

Man was led, for his subsistence, to seek a mode of preparing animal food for his use by roasting it over the fire; and having, in the course of time, built rudely a sort of oven made of earth, and the earth having become hardened through the action of the fire, our forefathers would soon discover all the advantages that might be derived from such a process for making brick or pots, and utensils for common use. Specimens of the potter's art in ancient times we have in plenty, and in a variety of forms and shapes, which for elegance have not been surpassed. We need only allude to the Etruscan vases in the collection of the British Museum.

In firing bricks it will not unfrequently happen that some kind of vitrification takes place in the bricks placed in the hottest part of the fire; and one might naturally suppose that one process would lead to the other; but such does not appear to have been the case, at any rate, for many centuries. Later, horn and skins were in use down to the third or fourth century of the Christian era, and oiled paper or mica was also used in lieu of window glass, nearly up to the time of the reign of Elizabeth. If we are to give credence to the narrative of Pliny, to accident alone, as in many other instances, are we indebted for the discovery of glass. Some traders, being weather-bound, landed on the banks of a river in Syria, and began to prepare a place in the sand for cooking their meals, after having gathered for fuel a great quantity of an herb known there by the name of *kali*, which plant must have contained a large proportion of carbonate of soda, and this, being mixed with the sand, yielded, through the agency of fire, a sort of vitreous substance. Such is one of the accredited versions of the origin of glass.

Glass has at all times, until recently, been thought a substance of great importance; and even amongst the primitive inhabitants of South America and of the Indian continent, who were, when first visited by the early European navigators, found to possess gold and silver ornaments in abundance, it is well known that the first discoverers of those countries who happened to land in search of food or water had no difficulty in obtaining from the natives gold in exchange for some valueless pieces of glass, or a few glass beads which they would immediately use as an ornament round their necks or their wrists. As late as the middle of the last century glass beads, of various descriptions and of all sorts of colours, were extensively manufactured in France, principally for exportation to the colonies of South America and the islands of the Pacific Ocean.*

It may be said that, although glass is an article of first necessity to us, it is at the same time one with the nature of which very few persons are well acquainted; and the learned have even been often at variance as to the exact classification glass ought to belong to. It is not a mineral, since it has never been found in a primitive state in any country; neither can it be placed in the vegetable kingdom.

Glass has become with us an article so singularly cheap and common, that we are apt to lose sight of its immensely diversified qualities; but if only considered from a philosophical point of view, we shall find that few of the substances which we have in daily use, either in a simple or compound state, can be compared to glass in point of importance and of usefulness. Firstly, unlike any mineral, it is inodorous and clean to the fingers, and does not lose any of its weight by usage or wear: it is always transparent, whether in a cold or a red-hot state: it can take any shape whatever while in a state of fusion, and it retains it absolutely after it has cooled: it is capable of receiving the highest polish, and of taking any coloured tint, either on its surface or in its body; and it also has this peculiar and invaluable advantage that it does not retain the taste of any liquid or acid it may have contained: it is the most flexible of substances while in fusion, and becomes harder than any pure metal when once it has become cold: lastly, it is not liable to rust, nor to be consumed by fire.

The applications of glass are now so numerous that is difficult to imagine any one branch of industry or of manufacture which could be carried on for a single day without the use of glass in one shape or another. To some of the most important amongst the sciences, such as chemistry, physics, astronomy, the use of glass is a matter of absolute necessity; and, in proportion to the gradual and increasing requirements of these last-named sciences, especially astronomy, it will be found that the glass manufacturer has been obliged to perfect his mode of manipulation; and, by the aid of chemistry, has of late years obtained such magnificent results that the field for astronomical observation has thereby been considerably enlarged.

It appears that, although vessels made of glass had been in use for a considerable time previously, it was only about the third century of our era that glass began to be used for glazing windows. These consisted of an infinite number of small panes of various shapes, which were arranged so as to form certain designs for the ornamenting of windows in places of worship; glass having, on account of its rarity then, been almost, if not entirely, confined to that use.

St. Jerome, who wrote in the fourth century, speaks of glass in church windows; and Grégoire de Tours relates, two hundred years later, in the year 525, that a soldier of the army of the King of the Visigoths, who had invaded Auvergne, entered a church through a window, of which he broke the glass. Fortunatus, Bishop of Poictiers, towards the end of the seventh century, describes with admiration the painted windows of the Cathedral of Paris. St. Philibert, also in the seventh century, had the windows of the celebrated Abbey of Jumièges, on the banks of the Seine, near Rouen, decorated with glass.

At the beginning of the eighth century glass was unknown in England; and it was Wilfrid, Bishop of York, who died in 709, who first introduced glass into England, by sending for some glass-makers from France, according to a record kept to this day. A few years later, St. Bennet, Abbot of Wearmouth, wishing to decorate the windows of his monastery, sent for some glass-makers,—also from France; for it appears, from some authentic records, that the art of decorating windows with glass was practised in several parts of France, especially in Normandy, long before it was adopted in other countries.

It would seem that the art of staining glass was very easily discovered, although no date can be correctly assigned to the period when stained glass for church windows was first used. The practice generally adopted was to make a sort of mosaic design, by placing an infinite number of small pieces of coloured glass together. This was in use for several centuries before the art of painting on glass, properly speaking, was discovered, which seems soon to have extensively spread and to have been cultivated by many excellent artists, to judge by the numerous specimens still in existence on the Continent. But for the sixteenth century, so rich already in artistic talent, was reserved the glory of carrying glass painting to a degree of excellence which has never been equalled since; and the names of Jean Cousin and Bernard de Palissy will be honoured for ever, amongst the large phalanx of glass painters in all countries. The most remarkable painted windows, perhaps, in this country, are the windows of the various colleges at Oxford, which were executed during the seventeenth century by Bernard Van Linge and his pupils. William Price also repaired some of the glass paintings in Queen's College, Oxford; and in Christ Church painted a remarkable composition from the designs of Sir James Thornhill. Besides these may be mentioned the windows of Lichfield Cathedral, and several other very ancient windows in Christ Church, and especially in the residence of the Dean of Westminster, near the Abbey.

Having been, for many years, professionally acquainted with printing in connection with the fine arts; and having observed the immense development the new art of photography has taken, and the large field it has opened for representing all sorts of subjects, of animated, as well as still life; it occurred to me that, if a means could be found to print the photographic image on glass, as easily as it is done on paper, and through the agency of some chemical composition which would admit of employing ceramic or vitrifiable colours, and burning them in, a great result would be attained, and a new and considerable branch of industrial art might thereby be opened. Considering the numerous and various attempts which have, from time to time, been made to introduce a substitute for glass painting in the decoration of houses, I believe it can be said that a want was generally felt for supplying the growing taste for pictorial decoration; for glass painting is an expensive process, and requires also a considerable time to obtain a perfect result. There is a process known as lithophany, or transparent china, or biscuit slabs, which are now made, in Germany principally, and some very good specimens can be seen; but although any kind of subjects, on a small scale, can thus be represented, and with a very good effect, the slabs are heavy and thick, and can never come into use as a substitute for glass painting. Some few years ago, a new mode, which was then termed "potichomany," was introduced, which had for a short time very great success: I allude to the mode of pasting coloured prints inside a large glass bowl or jar, and applying a thin layer of plaster of Paris, in a liquid state, so as to fix the paper firmly, and create an opaque background, by giving substance to the whole, when seen from a distance. Some very good specimens of this were obtained, and it afforded for a time an agreeable occupation to many a young lady. Another mode has also been tried, and some very pretty results produced, by applying prints obtained by lithochromy, or lithographic printing in colours, on a pane of glass, and varnishing them at the back with copal or some such varnish: these will for some time resist the effects of the weather when placed in a window; and this is perhaps the nearest approach to glass painting in point of effect yet achieved; but practically it

* Immense quantities of such beads are still shipped to various parts of the world, from London and elsewhere in this country.—ED.

does not answer, for the varnish will not stand exposure to the weather from outside, and the constant cleaning glass requires renders it liable to be injured, so that the design soon perishes.

In the mode which is now for the first time introduced, no such danger or liability need be feared, since the colour has been firmly fixed in the substance of the glass by fire; and, being composed of the same elementary materials, has become part of the glass itself, and can only be destroyed by the glass being annihilated by breakage.

In order that the process may be very distinctly understood, I shall now describe it by reading that part of my specification which relates to the placing the image on the glass, fixing it, and passing it through the fire.

This invention has for its object improvements in reproducing photographic and other pictures, engravings, prints, devices, and designs, on the surfaces of glass, ceramic, and other substances requiring to be fired to fix the same thereon.

For this purpose, I proceed in the following way:—A piece of glass, which may be crown or flatted glass, being selected, as free from defect as possible, is firstly well cleaned, and held horizontally while a certain liquid is poured on it. This liquid is composed of a saturated solution of bichromate of ammonia in the proportion of five parts, honey and albumen three parts of each, well mixed together, and thinned with from twenty to thirty parts of distilled water, the whole carefully filtered before using it. The preparation of the solution, and the mixing up with other ingredients, should be conducted in a room from which light is partially excluded, or under yellow light, the same as in photographic operating-rooms, so that the sensitiveness of the solution may not be diminished or destroyed.

In order to obtain a perfect transfer of the image to be reproduced, the piece of glass coated with the solution, which has been properly dried by means of a gas stove (this will only occupy a few minutes), is placed, face downwards, on the subject to be copied, in an ordinary pressure frame, such as is used for printing photographs.

The subject must be a positive picture on glass, or else on paper rendered transparent by waxing, or other mode; and an exposure to the light will, in a few seconds, according to the state of the weather, show, on removing the coated glass from the pressure frame, a faintly indicated picture in a negative condition. To bring it out, an enamel colour, in a very finely divided powder, is gently rubbed over with a very soft brush, until the whole composition or subject appears in a perfect positive form. It is then fixed by alcohol, in which a small quantity of acid, either nitric or acetic, has been mixed, being poured over the whole surface, and drained off at one corner.

When the alcohol has completely evaporated, which will generally be the case in a very short time, the glass is quietly immersed, horizontally, in a large pan of clean water, and left until the chromic solution has dissolved off, and nothing remains besides the enamel colour on the glass: it is then allowed to dry by itself near a heated stove, and, when dry, is ready to be placed in the kiln for firing.

It may be stated that enamel of any colour can be used, and that, by careful registering, a variety of colours can be printed one after the other, so as to afford a perfect imitation of a picture; also that borders of any description can be subsequently added, without any liability to remove or even diminish the intensity of the colour in the first firing.

It will be easy to perceive that this mode of obtaining an image on glass, in an absolutely permanent substance, and of any description, colour, or size, may prove of considerable advantage and utility for the decoration of private houses, and also for public buildings. Now that, by means of the photographic art, the most correct views of any object or of any building or scene—even portraits—can be faithfully and easily obtained; when we see every day the results of the labours of photographers in all parts of the world, in the shape of beautiful prints; when we can be made acquainted, without leaving home, with the actual costume, habitations, scenery, manners almost, of all countries,—for instance, China and Japan, which have but recently opened their doors to European civilization; when, through the same means, we are able to see, for the first time, and the learned are able to translate from, the graphic reproduction with which photography furnishes us of those early inscriptions engraved on the rocks in Asia, and by the Egyptians on their splendid monuments; I need only point out the usefulness of the mode of fixing those images, in an indelible manner, for ornamental as well as for scientific purposes.

In large cities, like London, where houses are built so close to one another; in how many places may not the process become available, by enabling any one to introduce, for a very moderate expense, pleasing or instructive images where common plain ground glass is now used, to shut out the sight of a disagreeable object, a dead wall, or an unpleasant neighbour, without diminishing the amount of light more than is convenient.

In the library, fitting subjects might be introduced on the windows by a judicious selection of the portraits of favourite authors, or of famous scenery at home or abroad. In the dining-room, also, appropriate pictures could be selected, such as flowers, fruit, or game subjects, so disposed as to harmonize with the decoration of the room. Even for domestic purposes, for lamps, or screens, or any object in glass, the process will be found useful, especially on account of its rapidity, which will enable the manufacturer to execute and to deliver an order at a very few days' notice.

In the discussion which followed, Mr. Philip Palmer would express his obligations to Mr. Joubert for having brought forward this subject of window glass. Important as the subject was, within the last few years it had seldom been brought before the attention of this Society. It was now thirty years since he became a member of the Society; and he recollected that at the first meeting he attended the subject was that of window glass, and he believed the same subject had only been brought before them two or three times since. The Great Exhibition of 1851 afforded an opportunity for bringing this subject forward; and the approaching Exhibition of 1862 would, he hoped, probably furnish another occasion for doing so. With regard to the antiquity of glass, he might mention that in the British Museum there was a specimen of glass said to be of a date 3,000 years before Christ. Whether that was the fact or not he did not know, but it was certain that some very old specimens of glass were to be seen in the British Museum. He quite agreed with the remark in the paper, that glass was so cheap and common that they were apt to lose sight of its immensely diversified qualities; and, therefore, any attempt to ornament it in this beautiful and artistic manner deserved the strongest encouragement of all lovers of art. There was a period in the history of the importation of painted glass which was personally interesting to himself, and which was spoken of by Horace Walpole. It was matter of history, but was connected with his (Mr. Palmer's) great-grandfather, who imported large quantities of painted glass in 1753-4; and the circumstance gave rise to an amusing chapter in Walpole's letters. With regard to the cost of glass painting, he did not know that that was a subject which he ought to touch upon in the presence of several eminent glass-painters whom he saw in the room, but he might venture to make this general remark—that a really good work of art must be well paid for; and if they employed first-rate talent, whether in painting upon glass or in architecture, that talent must be paid for; and glass painters were quite as much artists as those who painted upon canvas or paper. With regard to the decoration of glass at a moderate expense for the purpose of shutting out the view of dead walls, or a disagreeable neighbour, Mr. Joubert had contrasted this process with the use of plain ground glass. That had been used for a great many years: enamel patterns had been produced in such immense quantities that the use of the latter had been much larger than that of plain ground glass. The patterns had become so common that architects were always seeking for something new. This process, as it appeared to him, was calculated to supply that want, inasmuch as it enabled persons to select any number of subjects and have them reproduced. Having been connected, as he and his family had been, for a century and a half with the glass trade, he wished to express his acknowledgments to Mr. Joubert for having brought this subject before them; and he would add that he was quite sure all who were interested in the trade would be happy to give him the support which his ingenuity deserved, and to assist in bringing before the public this very beautiful invention.

In reply to Mr. Peter Graham,

Mr. Joubert said, with regard to the size, that the specimens he had exhibited as being unburnt, 24 by 17¼ inches, were the largest he had yet produced; but he apprehended the size was only limited by the dimensions of the kiln. There would, of course, be a little more care required in manipulating upon a large picture, but there would be no difficulty in producing a picture of 3 or 4 feet square. The only difference was the greater risk in burning it: the larger the surface of glass to be subjected to any manipulation or firing, the more the risk was increased. As to the combination of colours, if he understood the question aright, it was, what combination of colours could be burnt at the same time. That was a question which he was scarcely in a position to answer with certainty at present. In the specimens upon the table it would be observed that they were almost all of one colour. He thought it better to produce them perfectly in monochrome in the first instance; and, having mastered the difficulties of manipulation in one colour, then to go to the three or four colours. He would call attention to one specimen, having a coloured border with an edging which had the appearance of ground-glass. It was, however, produced by a coating of flux. The coloured border was also added, and was burnt in at the same time with the white enamel—all in one firing; showing that a colour and white enamel could be accomplished at the same time. He had been able to produce four colours in one burning. He had no doubt, with improved manipulation, a variety of colours could be produced at one firing; but all glass-painters were aware that, to attempt to produce perfect copies of pictures, with all shades of colours, would be to branch into another line of art. Instead of being mere printing, it would become regular glass-painting. It had been his object to avoid that from the first. Glass-painting was executed very beautifully in this country; and upon that subject he might remark that an art which flourished two hundred years ago seemed to have fallen into disuse for the last one hundred years, and it was only at the beginning of the present century that glass-painting had seemed to have revived. Although glass-painting was not invented in England, he might say that this was the country in which that art had been kept alive more than in any other. The third question asked by Mr. Graham was, with respect to the size to which pictures could be enlarged or diminished. The camera was the instrument employed both for enlarging and reducing. The enlarging of designs through the camera was practised in Paris more extensively than in this country. In a short time there would be an exhibition here, in which objects would be shown as large as life. This process was in operation at present in Paris, but a large apparatus was now being prepared for introducing it into this country. With regard to the cost of these specimens, as compared with ordinary glass-painting, it was difficult to give an answer to that question, because there was no fixed price for glass-painting with which it could be compared. The operations of the glass-painter were exposed to many accidents. A work which had occupied weeks or months might spoil in the last firing; therefore, the risk being so considerable, was one reason why the price of glass-painting must be arbitrary. Taking the average of the smaller specimens exhibited, he believed they could be sold at about 8s. per square foot. He had no doubt, when this invention was taken up generally by the manufacturers, the cost would be very considerably reduced.

Mr. Bishop remarked that, when he was at Pompeii about two years since, he was shown a piece of plate glass about three-sixteenths of an inch in thickness, which was the earliest specimen of plate glass he had met with.

Mr. Joubert was aware of the fact just mentioned; but there seemed to be some difficulty in establishing the fact that it was really glass. Some learned persons considered it was not glass, but merely a piece of transparent slate or mica that was used in ancient times, which, through the agency of fire, when those cities were invaded by lava, had assumed the appearance of glass. It was a great question whether it was glass.

Mr. William Hawes said they must have arrived at the conclusion, from what they had heard, that here was a new application of one of the newest and most recent discoveries connected with the art and industry of the present day. Photography, a young art, was applied in a new form, and with great facility, to produce most beautiful effects; and they had been told, with a degree of fairness and candour which made them feel satisfied that every word was true, that in the experience of only two years so great a proficiency had been attained, that, whereas the failures were formerly fifty per cent., they were now reduced to not more than one per cent. They had also been told, incidentally in the discussion, that the art of painting upon glass had fallen into neglect for a considerable period in this country, but had again pro-

gressed within the last few years. It was about 120 or 130 years ago that the excise was put upon glass. The effect of that interference was to check the application of glass to the most beautiful purposes of domestic life. About 100 years ago the art of painting on glass relapsed, and had only recently revived. It was singular that that should be just about the time when the excise was put upon glass. If that fact was incorrect, his reasoning would fail; but he deduced this conclusion from it, that this was another instance that where there was entire freedom of a manufacture from fiscal imposts, men like Mr. Joubert could study and experimentalise at comparatively little cost; whereas, if the law put a high duty upon this material, the cost alone would almost have prevented the advancement of such an invention as this. No one could doubt that if Mr. Joubert could produce designs of this kind, at a cost of 8s. per foot, in the present stage of the invention, in a few years' time they would be produced at a price which would bring them into common use.

THE INTERNATIONAL EXHIBITION OF 1862 AND ARCHITECTURAL ART.

THE Council of the Architectural Museum and the Committee of the Ecclesiological Society have sent out a reminder to architectural artists that the last day for applying for space at the International Exhibition is not far distant, although the limit of June 1st will not, it is understood, be absolutely insisted on. After pointing out that the Royal Institute of British Architects has appointed a Representative Architectural Committee to take steps, in concert with the Royal Commissioners, for the efficient representation of architecture and architectural art at the coming Exhibition, they say:—

"The Architectural Museum and the Ecclesiological Society feel that they break no confidence when they state, that it is equally the desire of the Representative Committee and of themselves to obtain the sanction of the Royal Commissioners to the exhibition of architectural art in immediate juxta-position with that of architecture, and they therefore trust that while the various artists whose performances come under the designation of architectural art, will not neglect to make their separate applications for space before it is too late, they will be willing at a later period to co-operate in any scheme for the arrangement of the exhibition of architectural art which may be decided upon between the Royal Commissioners and the Representative Committee."

BIRMINGHAM ARCHITECTURAL SOCIETY.

THE annual meeting of the Birmingham Architectural Society was held on Thursday evening, the 23rd ult. The report of the Council was of an encouraging nature, the accounts showing a balance in favour of the institution. The following gentlemen were elected officers for the ensuing year:—President, Mr. J. G. Bland; Vice-President, Mr. William Harris; Treasurer, Mr. J. R. Botham; Honorary Secretary, Mr. A. Phipson. To fill up vacancies in the council the meeting elected Professor Chamberlain and Messrs. Charles Edge and Thomson Plevins.

PROPOSED MONUMENT IN MEMORY OF JOHN BUNYAN.

THE committee appointed to erect a monument to the famous author of "Pilgrim's Progress" are continuing their exertions, and a festival, as it was called, was held in the Polytechnic on Monday evening last, in aid of the intention; when, in addition to the interest of a meeting over which the Earl of Shaftesbury presided, there were several relics of John Bunyan, from Bedford, exhibited—his chair, cabinet, pocket-knife, and other things.

As our readers know, the tomb of this celebrated man, in Bunhill Fields, has been allowed to fall into a bad state of decay, and but for the care of a gentleman connected with the ground, who had an inscription cut at his own cost, there would have been by this time no mark visible upon the tomb. For some time past endeavours have been made to obtain means for the purpose of restoration, and also for the purpose, we trust, of raising some more worthy memorial near the place where Bunyan's ashes rest. It seems to us remarkable that in this respect such long-continued neglect should have been allowed, and that there should have been found the least difficulty in obtaining a very large sum for this purpose. There are few persons who, either in school-boy or other days, have not derived both instruction and pleasure from the delightful dream.

The British Museum catalogue of books shows an immense list of editions of the "Pilgrim's Progress," which are preserved in the library. These are of various dates: some are English and American editions, and there are others in the languages of various foreign countries; millions of copies have been circulated since the time of the first publication. The young are charmed with the adventure, and men of mature years with the wisdom and truth of the imagery. Although Bunyan lies in one of the burial-places of the Dissenters, and himself belonged to that body, yet so generally is his most celebrated work appreciated, that it can scarcely be expected that the proposal will be looked at in any sectarian spirit.

WATER FOR JERSEY.

THE public meeting of the St. Helier Water Company was held on Wednesday last, the 22nd instant, under the presidency of the Mayor. Judges Le Bailly, Le Quesne, and Nicolle, with the Dean of St. Helier, having moved resolutions in a full assembly of influential inhabitants of the island, they were carried unanimously. Subscriptions to a considerable amount were proposed, and the meeting pledged themselves to support the project.

The Messrs. Easton, engineers of the company, and Mr. Hardinge, attended as deputed by the board of the company, registered in London under the 19 & 20 Victoria. That Act has recently been adopted by the States of Jersey, and progress was delayed until it should be completed. However, it had been sealed a few days previously to the public meeting, and thus the chief apparent deficiency of the prosperous and commercial town of St. Helier, will soon be remedied.

It is strange that in the exceedingly beautiful island of Jersey, where there is an abundance of the purest stream water, a town population of 35,000 inhabitants should be at this day dependent for water supply upon pumps and wells, and more especially since a gas company established there is paying large dividends; but we must recollect that magnificent Paris is in nearly the same condition. The latter has, nevertheless, a large section of its most robust labourers, 20,000 water-carriers, engaged in that occupation. In Jersey, however, it is otherwise, and there is no want of occupation for the sinews of industry. The harbour, the public buildings, and the whole vicinage are improving as rapidly as any town in the British dominions.

SOAP.

IN an address delivered by the engineer of the Glasgow Waterworks, that gentleman remarked, that Mr. Porter estimates the annual consumption of soap at 9·2 lbs. per individual. The total population of Glasgow may be taken at 460,000; deduct for Gorbals, 110,000; total on the north of river, 350,000. Supposing that only 5½ lbs. of soap is allowed for each person, it will give 72,000*l.* as the annual cost of soap, on the average of the country, consumed by the 350,000 persons, on the north of the Clyde. Since the introduction of Loch Katrine, owing to its softness, careful returns show that nearly one-half of the soap formerly used will now suffice. If these calculations were applied to London, the saving there, allowing for the harder character of the water, would amount to not less than 400,000*l.* per annum, equivalent to the interest of *ten millions of money*, which it would be worth the while of the Londoners to pay for water equal in quality to that of Loch Katrine.

THE GUARDS' MEMORIAL.

WITH reference to what has been said by ourselves and others on the subject of the present aspect of the Guards' Memorial, Waterloo-place, Mr. Bell, the sculptor, writes to us as follows:—

"I would, in the first place, ask, is it possible for an artist to pass through a more severe ordeal than that his work should be seen in the centre of London in an incomplete state? Nothing can be more just than the observation that the monument at present has but one front of interest. Also that the figure of Honour appears small. But why does she appear small? Because at present the whole pedestal appears a pedestal to that figure. Were, however, the sides and back of the middle pedestal duly enriched with bronze, according to the design, and thus combined with the bronze Guards in front, the pedestal of the top figure would be reduced to the small plinth on which she immediately stands; when she would appear of the just size as a finial surmounting the composition. The above decorations of the sides and back, besides enriching these faces and giving them interest, would break the long sloping line of the pedestal, and present a wholly different, and, I trust, picturesque outline in all views. Also, if these were added, the granite itself would, in addition, be relieved by some details which, taken with the above, would, I am sanguine, redeem the effect from its present crudity. The statues are towards the south, so as to receive the direct sunlight, but the various secondary decorations to complete the trophy of guns at the back, and also the faces and profiles of the sides, would, I am sure, render the monument picturesque even as one comes down Regent-street."

We should prefer it, as we have already said, on the other side of the way, with the face towards Regent-street. If, however, it is to remain in its present position, something more *must* be done with the pedestal to render the monument an agreeable object. There is but one opinion on the subject.

SCOTLAND.

Glasgow.—The Town Hall at the Cross, erected so long ago as the year 1636, but very much deserted and neglected, and applied to questionable purposes of late, is to have another chance of resuscitation, according to the local papers. It is proposed to convert it into a spacious library for the use of the citizens; and this is to be done through the instrumentality of a joint-stock company.

Leith.—A public meeting has been held here, for the purpose of considering the propriety of having powers conferred on the public authorities for widening the streets, and otherwise improving the town. The Provost occupied the chair, and referred particularly to the necessity of having a new slaughter-house, a larger supply of Lochend water for sanitary and manufacturing purposes, and a public park in North Leith. Resolutions favourable to the purposes of the meeting were unanimously passed.

St. Andrew's.—A new Town Hall has just been erected in St. Andrew's, from the designs of Mr. James A. Hamilton. The structure is in the old Scotch Baronial style. The council hall is 38 feet in length by 24 feet in breadth, and 18 feet in height. The great hall is 75 feet in long, 36 feet broad, and 28 feet high. The structure altogether measures about 130 feet by 90 feet. The external elevation is enriched with various shields, devices, and coats of arms, among which is that of the late Sir Hugh Playfair, to whom the improvements in St. Andrews are mainly due, and by whom this building was originated and carried out.

CHURCH-BUILDING NEWS.

Tuddenham. — On Whit-Sunday, Tuddenham Church was re-opened. A new east memorial window has been erected. The subjects of the window are the following: in the centre light are the Nativity and the Crucifixion; in the left, Noah in the Ark, and St. Peter falling into the Sea, the Saviour taking him by the hand; on the right, the Priests carrying the Ark of the Covenant over the Jordan into the Promised Land, and St. Paul taking leave of the Ephesian converts and elders on the sea-coast. The principal tracery-light contains the subject of the Resurrection of the Saviour: the two minor tracery lights contain an angel each, with musical instruments. The work was executed by Mr. F. Preedy, of London. The ancient monuments in the church have been restored. All these have been executed by Mr. H. Day, of Ipswich, ecclesiastical decorator. An altar table, by Mr. Ringham, of Ipswich, has been placed upon a raised dais composed of tiles. Beneath the window is a casing of stone and string course. The east gable has been adorned with stone coping, surmounted with a cross, and the cross on the east gable of the nave restored. The tiles and the stonework of the memorial window, &c., have been done by Mr. Farrow, of Ipswich.

Battle.—The tenders for the erection of two chapels in the proposed cemetery, Mr. Carpenter, of Hastings, architect, were as follows:—

Howell	£825	0	0
Nicholas	604	19	0
Jones & Bridgeland (accepted)	577	4	0

For the laying out and drainage of the ground, the following were sent in:—

Bridgeland	£885	0	0
Adds	649	0	0
Howell	629	0	0
King & Son	610	0	0
Sharon (accepted)	550	0	0

Stone.—The parish church restorations have been carried out, under the superintendence of Mr. Street, architect, by Messrs. Gumbrell & Bills, of Dartford; Mr. Lockyer, of Greenhithe

and Mr. W. C. Middleton, of Gravesend. The church is in the Early English style; and many of its features, which had long been hidden by the so-called improvements of other days, have been exposed to view, and the proportions of the building are now quite developed.

Hove (*Brighton*).—The foundation-stone of a Congregational chapel and school has been laid at Hove. The chapel will abut on North-place, which will form the direct approach to the suggested new railway station. Villas also are to be erected to the north of the chapel; so that, in time, it will become central. Mr. H. N. Goulty prepared the design for the chapel and school, which latter is already in course of erection. The style is Early English. The chapel is calculated to hold 800 persons; but that will not be commenced just yet. The schools will consist of a principal hall, or school-room, 60 feet by 30 feet, with an additional class-room, 30 feet in length.

Hatherley.—The corner stone of a new vicarage-house at Down Hatherley has been laid by the incumbent, the Rev. W. H. Maddy, who afterwards entertained about twenty of the workmen at dinner. The building has been designed by Messrs. Fulljames & Waller, and will be erected by Mr. Estcourt, of Gloucester, builder.

Coates (*Gloucestershire*).—The parish church has been reopened. The restorations, now completed, have not affected the general plan of the church. The works just completed consist of an internal restoration, the substitution of a chancel arch for the plain Norman arch, which has been rebuilt in the north wall, to give access to a vestry hereafter to be added. The chancel, which was formerly shut off from the greater portion of the church, is thus opened. A change has been effected by the removal of a western gallery, which concealed from view the stone arch, and by the removal of the old high pews which boxed up the arcade columns, and substituting for them open benches throughout. These are of stained deal, with oak cappings. The chancel has been rearranged, a raised sanctuary formed laid with tiles inclosed within bands of stone in ornamental patterns. The chancel has been re-roofed with an open arched timber roof, and a new east window, with tracery, replaces the debased window formerly existing. The roofs of the aisle and chapel have been stripped of their plastered ceilings, repaired, and restored to their original condition; but, on opening the nave roof, it was found that the timbers were too much decayed to allow restoration, and a new stained deal roof has been erected. The accommodation in the area of the church has been increased from 180 to 211 seats. The cost of the restoration has somewhat exceeded 600*l.*, and an additional 200*l.* will be needed to accomplish the entire restoration contemplated. The contractors are Messrs. Wall & Hook, of Stroud, under the superintendence of Mr. Norton, architect.

Bath.—The tender of Messrs. Bladwell & Ambrose has been accepted for building the new Roman Catholic church here, the foundation of which has been commenced. The site chosen is in a garden adjoining the road leading to the railway station.

Brecon.—The tender of Messrs. James & Price, of Cardiff, was conditionally accepted for the restoration of the tower and transepts of the Priory Church. The Marquis Camden has also appointed the same builders for the chancel, which he has undertaken to restore at his own sole cost. In consequence of further repairs than were at first contemplated being required in the tower and transepts, the subscriptions already promised have been found to be insufficient. The works, however, will be commenced forthwith.

Rhyl (*Flintshire*).—The foundation-stone of a new church has been laid at Rhyl. The proposed church is estimated to cost about 8,000*l.* Of this sum, 2,000*l.* only have been promised; but so urgent is the need of the church, that the committee resolved to commence at once; and have, accordingly, entered into a contract for the nave and the aisles, which will accommodate about 800 persons. The works have been begun; and, on Whit-Monday, the foundation-stone was laid. Mr. Scott is the architect, and Messrs. Beanland, of Bradford, Yorkshire, are the builders. The church will be built in the Early English style; and, when complete, will consist of nave, north and south aisles, chancel, and tower at the east end of the north aisle, with a north porch. The length of the nave will be 99 feet, and the total width of the church rather more than 63 feet: the chancel will be 40 feet 9 inches long by 30 feet wide. The height of the tower and spire to the top of the vane will be 193 feet, and the tower will be 24 feet square, built in three stages. The fittings inside will be of pitched pine, with open roof, stained and varnished. The inside dressings will be of Bath stone, and the outside of Cefn stone, with intermediate surface of dressed limestone. The windows of the aisles are plain couplets: the east window will be a three-light window, and the west a four.

Lichfield.—A sculptured font for Lichfield Cathedral has just been completed by Mr. James Forsyth, of London.

Frankby.—The foundation-stone of a new church, dedicated to St. John the Divine, has been laid at Frankby. The church is being erected by subscription, together with the parsonage. The cost of the church and parsonage will be upwards of 4,000*l.* Messrs. Hay, of Liverpool, are the architects; and Mr. Thomas, of Oxton, the contractor.

Chorlton-cum-Hardy.—This village is likely soon to possess a new parish church, according to the *Manchester Courier*. The style of architecture of the proposed new church will be the transition from the Early English. Par-point stone will be used in the erection, and the church will consist of nave, chancel, aisles, and chapels. The building will be surmounted by a spirelet. The interior of the edifice will be fitted with open seats, the aisles paved with encaustic tiles, and the roof will be of open timber, and the shafts of the arches topped with foliated capitals. The new church is to accommodate 600 persons, and 200 of the sittings will be free. The estimates amount to 3,641*l.*, but it is expected the entire outlay will not fall short of 4,000*l.* Messrs. Pennington & Bridget, Manchester, are the architects, and Messrs. Ellis & Hinchliffe, Manchester, the contractors.

Cheetham (*Manchester*).—The first stone of a new Wesleyan chapel and schools has been laid at Rydal Mount, Cheetham. The style will be Gothic, and the cost about 2,500*l.*, most of which has been raised. Mr. Brown, of Manchester, is the architect.

Prestwich.—The parish church here has been reopened. During several months past various alterations and improvements have been in progress. The chancel has been extended and restored, and has had a new east window put in, with roofing to match the old portion. A new vestry has been built. A new stained-glass east window has been inserted. The stained glass has been executed by Messrs. Ward & Hughes, of London. It is also intended to insert stained glass in a new window west of the font, the gift of Mr. Percival, of Manchester. The whole of the ceiling of the nave, and the old portion of the chancel, have been restored, and decorated in colours and gilding, in a manner similar to ancient painting found on the old timbers. A portion of the chancel has been reseated with open oak benches, with carved ends; and one of the recent improvements has been the reseating the nave in a similar manner, the whole of which reseating is free. The works have been executed under the superintendence of Messrs. Travis & Mangnall, architects.

STAINED GLASS.

St. Andrew's Church, Denton (*Lincolnshire*).—In this church a stained-glass window, in memory of the wife of Colonel Reeve, has been placed in the south transept. The stonework of the window consists of three main lights, and a tracery head of the Early Perpendicular style of architecture, the whole of which has been cleaned and restored under the direction of Mr. S. Green. The subject of the stained glass is so arranged that each light, so far as regards the figures, is complete in itself, and at the same time the whole forms one picture, illustrating the text, "Jesus said unto her, I am the resurrection and the life." In the centre light is represented our Lord entering the house of Martha and Mary; in the south light, Martha kneeling down, and behind, Mary is seated in contemplation and prayer. In the north are shown the two disciples who accompanied our Lord on this occasion. The artists are Messrs. Connor, of London.

Crayford Church, Kent.—This singular church, having double naves, with the chancel between, will gradually be filled with painted glass, under the zealous and earnest efforts of the rector. The new east window will first be filled with painted glass by Messrs. Ward & Hughes, the designs and cartoons of which are now being prepared under the directions of Mr. Joseph Clarke, the architect. One of the large north windows will follow, the gift of a lady connected with the parish; and other windows will probably be taken in hand before the works now going on in the church are completed.

Datchet Church.—A window, in three compartments, by Messrs. O'Connor, of London, representing the Resurrection and Ascension, with our Saviour enthroned above, has just now been placed in the north transept of Dachet Church, in memory of the late John Crake, by his widow.

Gloucester Cathedral.—A scaffolding has been erected in the interior of this cathedral for the purpose of removing the painted glass of the great east window prior to its entire restoration. The glass, we are told, will be forwarded to Messrs. Ward & Co., of London, by whom, under competent superintendence, the stained glass now remaining in the window will, it is said, be preserved, and the window completed, as nearly as possible, in accordance with the original design. It is also said to be the intention of the Dean and Chapter to erect immediately two windows of Munich glass in the north aisles. The memorial window to the Rev. Mr. Evans in the south aisle, next the porch, will be completed in June; and the memorial window to be erected by Lady Davey in the south aisle, will be commenced immediately.

Bath Abbey Church.—It is in contemplation to erect a memorial window of stained glass in one of the small windows in the south aisle of the nave of the Bath Abbey Church, to the late Mr. Geo. Norman.

SCHOOL-BUILDING NEWS.

Paddington.—St. John's Servants' School, instituted by the Hon. Arthur Kinnaird, M.P., and his wife, was opened on the 16th May, by a public meeting of its friends; the Earl of Shaftesbury in the chair. The principal supporters of this school are Mr. and Mrs. Kinnaird. Upwards of 6,000*l.*, out of 9,000*l.* required, have already been raised. The Bishop of Sodor and Man, in his address to the meeting, stated that the intention of the institution was to provide us with a class of superior and trustworthy servants, on whom we so greatly depended for our comforts. The architect of the building was Mr. F. W. Porter.

Ashford (*Kent*).—The committee of the British Schools, with the advice of the committee of the Council of Education, are about to erect new school-rooms and a teacher's residence, towards the carrying out of which the latter have offered a grant of 586*l.* The committee have accordingly secured an eligible site, near Chart-terrace, and the cost of erection, &c., will be from 1,400*l.* to 1,600*l.*

High Ercall (*Salop*).—New schools have been opened here. The buildings have been erected midway between the church and vicarage. The schools are intended for girls and also boys until old enough to go to the free grammar school in the village. The buildings are of brick and stone. The style is plain Middle Pointed. The school is surmounted with an oak bell-turret. The cost, including the fence walls, will be about 600*l.* The building has been erected by Mr. James Nightingale, from the designs and under the superintendence of Mr. J. L. Randal, of Shrewsbury, architect.

HASTINGS COTTAGE IMPROVEMENT SOCIETY.

THE Committee of the Hastings Cottage Improvement Society inform the shareholders in their eighth half-yearly report, for the six months ending 10th April last, that the Society has continued to increase and prosper during the past six months. The number of their houses now amounts to about 124, and the number of tenants to about 137. The purchases of fresh property made during the past half-year have not been very extensive or very important. Nine houses have been purchased in the parish of All Saints (in Union Row, and All Saints-street); two in Sinnock's Square, in the parish of St. Clement; and three in the parish of Ore, just beyond the pay-gate on the old London Road. The Society's capital has increased during the past six months from 11,950*l.* to 14,000*l.*; and the number of shareholders from fifty-seven to sixty-seven. The average amount of each shareholder's investment continues about the same, viz. 209*l.* The price of each share is at present 107*l.* and will be raised to 108*l.* when the capital reaches 16,000*l.* During the past half-year the Society's total income from all sources has increased from 651*l.* 18s. 10d. to 756*l.* 16s. 6d., and the net income from 389*l.* 5s. 11d. to 408*l.* 15s. 9d. The gross rents have increased from 524*l.* 18s. 4d. to 599*l.* 9s. 11d., and the net rents from 376*l.* 14s. 7d. to 383*l.* 1s. 4d. The usual dividend at the rate of 6*l.* per share per annum has been paid to the shareholders. The average arrears of rent due to the Society during the past half-year have been about

23*l.*, which is a small sum compared with the total rental; especially when it is borne in mind that the rent is paid *in advance*, and that few of the tenants are more than one week (which is in fact *the week in advance*) in arrear. There has been no loss from bad debts; and of the sum now due for arrears it is expected that not more than 3*l.* or 4*l.* will be eventually lost to the Society. The loss from empty houses has been about 16*l.* 16s., of which sum nearly three-fourths were due to the Tackleway houses, which continued unoccupied for several weeks during the winter months. The Society's houses have been frequently all occupied, and there have seldom been more than two or three empty at the same time. The most notable point in the history of the past half-year, continues the report, has been the laudatory terms in which the Society has been mentioned in the public journals, both in this country and on the Continent (see the *Journal des Débats*, Jan. 19), and (as a consequence of this), the numerous applications for advice and information sent from other provincial towns in which there is an intention of endeavouring to establish a similar society. Perhaps a still greater proof of confidence is afforded by the fact that several of the shareholders residing in London are so well satisfied with the mode of operations adopted at Hastings that they have resolved to try the same experiment in one of the worst parts of the Metropolis, and have themselves advanced the whole of the money required for the purpose.

THE CONDITION OF NEWCASTLE.

CIRCUMSTANCES have prevented me from writing sooner respecting your able and truthful articles on the sanitary condition of Newcastle-upon-Tyne, and I regret that in some quarters the picture of that ancient town has not been kindly considered; and it is with surprise and shame that I find this to be the case; for in no town in this realm, taking into consideration the extent of the population, have so many men, in various ways distinguished, been reared. From this "canny" town have come famous admirals and soldiers. In this place the art of wood-engraving, that marvellous aid to education, was revived. Mathematicians, philosophers, poets, famed painters, and men of medicine, have here sprung up. A Newcastle man translated the Scriptures into the Chinese language. Two more men of the same locality *made* the locomotive, and established the system of railways, which is doing wonders not only in this land, but throughout the world. It was one of these Newcastle men who planned a railway through the ruinous territory of the Pharaohs, who spanned the Menai Strait, and the vast stream in Canada. Here was reared the inventor and manufacturer of the rifled cannon. There are other celebrities too numerous to mention. It can also be said that in few other towns are there to be found so many useful public institutions, or a greater expression by the inhabitants of liberal principles.

By the skill, energy, and honesty of one man, who in this town was educated in a charity school, great market-places, exchanges, and streets of palace-like buildings have been reared: in these houses drainage and ventilation have been well cared for; and in this respect they contrast strongly with the old portions of the north of England capital. Notwithstanding the general intelligence of the inhabitants, and the good example which has been shown, although pestilence has swept the place, and filled it with mourning and woe, and trade has at times been almost stopped, when, in certain localities, the cholera raged and destroyed human life with greater rapidity than during the Great Plague of London in 1665, these warnings appear to have been useless; and in many respects the town is exposed to the risk of another attack of cholera or any other similar scourge.

It is difficult to imagine how this can be allowed to go on. Amongst the medical men are gentlemen famed for their skill in sanitary science. It has been shown that, by the draining of the Infirmary, the number of cures has largely increased. By means of the Registrar-General's returns the people of Newcastle have an opportunity of comparing their death-rate with North Shields, and towns in other parts of the kingdom where the authorities have done their duty. Every week in Newcastle life is destroyed by the wilful neglect of sanitary measures; and it is certain that in no place, not even in the metropolis, the old part of Edinburgh, or elsewhere, are there to be found any conditions so disgraceful, and contrary to all ideas of decency and comfort.

This seems the more remarkable when we consider the immense revenue of the corporation, which should have been in a great measure devoted to the sanitary condition of the town, and to the improvement of the river, which is in a most foul state. It seems, however, that those who should feel an interest in the well-being of the town and its inhabitants look on with apathy. With one or two worthy exceptions, the local press have neglected their duty in directing attention to the evils which exist, and have even endeavoured to deny the existence of the filth, &c., which are looked at with wonder and disgust by every visitor. However the facts mentioned in the *Builder* may be spoken of in some quarters, there are thousands of people in Newcastle—and those who reside away from them who have relations and friends there acknowledge the correctness of your remarks—who sincerely thank you for directing attention to them, and hope it will be the means of rousing the right spirit of the inhabitants who are not interested in the rotten property or in continuing the dangerous system of drainage (or rather the want of drainage) in so many parts of the town.

A NEWCASTLE-UPON-TYNE MAN.

SUNDAY AT THE CRYSTAL PALACE.

LAST Sunday afternoon I had an opportunity of seeing assembled in the palace and grounds a vast multitude—40,000 people. The day was delightful, for the air was fresh and pleasant: the flowers and beautiful greenery in the foreground and middle distance, and the landscape and the pure grey tints of the grey horizon, together with the many thousands of orderly and well-conducted visitors, formed a picture which has seldom been surpassed. There seemed in this gathering to be people of all classes of the community: there were those clad in the gayest dresses, and others in well-brushed and homely garments, who did not the less in consequence enjoy the matters of interest which are here to be seen. This great assembly seems to have originated thus:—Some time ago, Crystal Palace share clubs were established, chiefly by small bodies of working men. The average price of a share, including transfer and stamps, is about 36s., and this entitles the owner to admission to the Palace on every Sunday. These tickets make the possessors shareholders in the company, and would have a value if put into the market. The subscribers to these clubs pay a small weekly subscription; and as the money becomes sufficient, the shares are bought and balloted for by the members; and, in the course of time, all of them become possessed of shares. Already a number of shares have been distributed amongst the working classes by this means. The number is not, however, sufficient to account for the crowds who flocked to the Palace; but the directors, wishing to encourage this scheme, granted a request on the part of those who have encouraged the club shares, that free admissions for one Sunday might be extensively distributed by the members to their friends. This plan was successfully carried out; and certainly the result of the experiment was such a grand success, so far as the general conduct of a Sunday multitude is considered, that it is an additional argument in favour of opening places of this description on the Sundays, the only day of the week in which numbers of the pent-up Londoners have an opportunity of enjoying them. Sacred music on a grand scale could do no harm here on the Sunday. Some dissatisfaction was experienced by a collection of a penny from the visitors: this, although a voluntary subscription, might, under the circumstances, have been as well done without.

AN ARTIST.

FRAMING MEDIÆVAL WOODWORK.

SIR,—All practical workers of wood who visit the Architectural Exhibition in Conduit-street, and especially those engaged in carrying out the designs of architects who excel in Gothic architecture, will be attracted by that excellent piece of workmanship, by Mr. Forsyth, of which you gave an engraving. I, however, was surprised to find none of my own class, and very few of any other class of visitors at that most worthy exhibition; and ere it closes I would suggest to the committee the propriety of keeping it open for a week or two till ten o'clock in the evening, and reduce the price of a single admission one-half.

Before ending these few remarks, I wish to raise a question concerning the proper method of framing chamfered Mediæval woodwork. In this bookcase, just under the writing-table, I find some chamfered framing executed in just the same manner that a stonemason would do it, viz., the shoulders are all square, and the chamfer is continued down in the horizontal part of the framing, and an unsightly little piece of the end of the grain is displayed. Now, sir, I, as a practical man, conceive it to be a piece of bungling on the part of any joiner to show any part of the end of the grain on the face of his work.

The method here pursued, which I find is often followed, may be adopted by the direction of the architect, in order to preserve the Mediæval character of the work; but if we are to imitate our forefathers so strictly in one respect, why not in every other? Then we should use nails in the place of screws, and we should have sash-bars as big as story-posts, and panes of glass that we could only see through with one eye at a time.

I.

COMPETITIONS.—THE AGRICULTURAL SOCIETY OF ENGLAND.

A COMPETITOR complains, with justice, that, writing for the particulars and conditions of competition offered by advertisement, he could get none; and thus continues:—

Doubtless, competition is thoroughly English; and one of our noblest characteristics is the love of a "fair field and no favour;" but the slovenly mode in which competitions are usually carried out cannot be beneficial to the public, or otherwise than unjust to the profession. Neither can it eventually be productive of anything but disappointment to both parties.

In this case of comfortably housing the industrious class, requiring no transcendent professional skill, yet of much importance to our metropolis and all over-crowded towns, as well as to their concurrent trades and manufactures; we have a public committee offering a patriotic premium; yet unprepared, at almost the last moment, with the particulars of instructions and conditions of competitions they advertise to supply. May not much of the irregularity of competitions be attributed to this slovenliness, and the unrecompensed services of a heavy correspondence most dry and tedious to any but professional men; also to the legal profession; who, for the sake of remote contingencies, frequently offer their services as honorary or assistant secretaries, when not one of the Board knows anything of the commonest detail of architectural affairs? Much must be attributed to the prevailing ignorance of the actual value of an architect's services; inducing a large portion of the public to consider their remuneration as so much money thrown away, and a great saving effected by dispensing with them as much as possible.

Surely, it behoves all architects to do justice to themselves, at least, by insisting on a fair definition of the extent, class, &c., of the accommodation required, and of the system to be adopted in the adjudication of the premiums. If a fair field and no favour could be insured, many a loyal and conscientious man would strive for the chance of winning credit for himself and benefit for both parties.

A SUBSCRIBER.

CARLISLE CORN-MARKET COMPETITION.

AT the last meeting of the Carlisle Town Council, Mr. Irving moved that 30*l.* be given for plans of the proposed Corn Exchange, 20*l.* to the first, and 10*l.* to the next best, and that the plans be advertised for. Mr. Porter said he did not object to a sum of money being offered for plans, but he thought some statement ought to be made of the sum they proposed laying out on the building. Mr. Irving said that with each plan they should desire a calculation as to the cost of the building. Mr. Porter said that was not exactly what he meant. He wanted them to say how much money they intended to expend, and then get plans in accordance with that sum. Mr. Cowing thought it was a waste of time talking about the subject at all. *Everybody knew the plans were all got, and cut and dried already.* All that was wanted was the money to pay for them. Mr. Irving remarked *that if the plans they had proved to be the best, they would be accepted.*—The motion was ultimately carried.

The advertisement which has been issued offering these munificent premiums, say the plans, must be accompanied with a detailed estimate of the cost, and that the selected plans are to become the property of the Corporation.

Do these intelligent gentlemen know what is the cost of "a detailed estimate?" Architects degrade themselves and their profession who enter into competitions on such terms, and in the face of the fact that plans are already prepared.

DIVISION OF WAREHOUSES AND BUILDINGS FOR TRADE AND MANUFACTURE.

METROPOLITAN BUILDING ACT, 1855.

MESSRS. GROVES & SONS have erected a large addition to their extensive granaries, at Platform-wharf, Rotherhithe-wall. The builder, Mr. Macers, was summoned by Mr. Hesketh, the acting district surveyor, before the police magistrate, at the Greenwich Police-court (Mr. Maude), for having, contrary to the said Act, built and made to the warehouse an addition, containing more than 216,000 cubic feet, viz., 430,000 cubic feet, and not divided by party-walls, in such manner that the contents of each divison may not exceed such first-mentioned number of cubic feet.

At the hearing, on the 1st day of May last, Mr. Honeyman appeared as counsel for Messrs. Groves, instructed by Mr. Kearsey, solicitor. The facts of the case and preliminary proceedings were admitted. A model of the buildings, showing the manner in which the additions had been made, and showing the communications to the several floors of the warehouse, was put in on behalf of Messrs. Groves.

Mr. Hesketh stated that the addition of which he complained was added to an existing warehouse by an extension on the west side, containing 338,276 cubic feet, by one at the north end containing 39,619 cubic feet, and by raising the existing building two stories, containing an additional 52,200 cubic feet, making a total addition of

430,000 cubic feet, of which the parts all freely intercommunicate one with another, and with the previously existing building, the floors being all of wood. He considered that he had only power under the 9th section to deal with the addition, which was contrary to the 4th rule of the 27th section, as it contains more than 216,000 cubic feet without being divided by party walls, so that the contents of each division might not exceed 216,000 cubic feet; and he asked the magistrate to make, under the 46th section, an order upon the builder, commanding him to comply with his requisition so to divide the addition.

Mr. Honeyman said that two magistrates, Mr. Burcham and Mr. Elliott, had already given their judgments upon similar cases, and produced copies of their judgments. In the former case the facts were precisely similar to the present case. He then showed on the model the works which had been done, as stated by Mr. Hesketh; but the magistrate would observe that there was, on the east side, a stone staircase, with a doorway from without, by which separate access was afforded to each story, there being no internal communication whatever between the stories, except by going out of one on to this staircase, and thence into another story. He referred to the third rule of section 27, preceding that relied upon by the district-surveyor, which enacted that "If a building in one occupation is divided into two or more tenements, each having a separate entrance or staircase, or a separate entrance from without, every such tenement shall be deemed a separate building for the purposes of this Act." The warehouse is "in one occupation," and therefore each story having a separate entrance from without (namely, from the staircase), is to be deemed a separate building; and inasmuch as none of the separate stories contain more than 216,000 cubic feet, there was no contravention of the Act. He pointed out that in addition to the staircase there were doors to each story for taking in goods, and they also gave a separate entrance to each story from without. Mr. Honeyman then referred to the definition of "party wall" in section 3, and showed that it only applied to a wall separating buildings occupied by different persons; and therefore this building, being all in the occupation of Messrs. Groves, its division by party walls could not be intended. Counsel further stated that the question was one of great moment to his clients, not so much on account of the expense of erecting the wall, but because it would prevent the ventilation through the building, which is so essential in a granary, and, in fact, that Messrs. Groves could not have erected the building at all if they had not relied upon former decisions, that no party wall is required.

Mr. Hesketh admitted that Mr. Burcham's decision was given in a case identical in its bearings with the present one, but he could not admit that the magistrate took a correct view of the Act, inasmuch as his judgment went entirely to destroy one of its rules, which the Legislature deemed so important, that in the 56th section, where the Metropolitan Board had power to approve of the construction of iron and certain other buildings, their power to alter this rule was expressly taken away. He contended, both from the context and the general intention of the Act, that the word "building," in the fourth rule, was not governed by the definition of the third rule (the object of which he endeavoured to explain); and that the staircase which was relied upon to give separate access to each story was in fact part of the building.

The Magistrate said that the judgments of Mr. Burcham and Mr. Elliott would have very great weight with him, and that he should reserve his judgment until he had an opportunity of consulting his brother magistrates, and adjourned the case to the 14th May.

At the adjourned meeting Mr. Maude said that he had given much consideration to the subject, and in the judgment which he should give he was allowed by his colleague, Mr. Traill, to say that he had his entire concurrence. He could not concur with the decisions which had been stated to have been given by other magistrates. His judgment was on two grounds against the defendant. In the first place, after carefully considering the bearings of the Act, he did not think that the word "building" in the 4th rule of sec. 27, could be intended to be restricted by the 3rd rule to a part or story of the building; for with the context it reads, "Every warehouse or other building used, either wholly or in part, for the purposes of trade or manufacture," &c. A story of a building could not be said to be a "warehouse;" nor could the words "building, used wholly or in part for the purposes of trade or manufacture," be restricted to a single story. He was more confirmed in this view, because, as far as he could see, the 4th rule would be rendered inoperative by the interpretation contended for by counsel.

But even if the word "building" is governed by the definition of rule 3, he could not admit that the several floors had "a separate entrance and staircase, or a separate entrance from without." He considered the staircase to form a common entrance to all the stories, which was shown to be so, because, if the door at the foot were closed, it would cut off the access from without to all. With respect to the doors to each story, through which merchandize was conveyed, they certainly in one sense would be separate entrances from without; but the rules of law would require in this case that the words, "having a separate entrance from without," should also be interpreted negatively as "not having any common entrance from without," otherwise the Act could be easily evaded.

At a request made on behalf of Messrs. Groves, the case was adjourned till the 29th May, in order to give time for consideration whether they should appeal to one of the superior courts, or comply with the requisition of the acting district surveyor. At the time appointed the parties appeared, and informed the magistrate that Messrs. Groves had agreed to build a party-wall which would divide the warehouse into the divisions required.

Mr. Hesketh mentioned that if the magistrates' decision had been in favour of the defendants, he would have had the legal assistance of the Metropolitan Board of Works in obtaining the judgment of one of the superior courts on this case.

SCREEN, UPMINSTER CHURCH.

SIR,—Your correspondent, "An Essex Organist," has been sadly misinformed in reference to the fate of the ancient illuminated oak screen in the parish church of Upminster, which separates the north aisle from St. Mary's Chapel; for instead of being desecrated, destroyed, and swept away, in the reckless manner described, the intention is, very carefully to preserve and case it, during the progress of the enlargement and restoration of the church; and, at the completion of the works, to leave it in its original position.

Some panelled wood-framing, composed partly of oak and deal (grained and varnished) of bad Classic design of modern erection, and blocking up a portion of the east window, *is* intended to be removed, and decoration of a more ecclesiastical character substituted.

Whether your correspondent's "pretty good authority," may have mistaken the fate of the grained framing for that of the oak screen, I know not; but "An Essex Organist" may consider, that his authority is not altogether reliable in the matter on behalf of which he solicits your protest. WILLIAM G. BARTLETT.

THE GREAT EXHIBITION AND THE BUILDING ACT.

AT the resumed hearing at the Hammersmith Police Court of the case against Mr. Kelk, the builder of the Great International Exhibition of 1862, at South Kensington, for not giving two days' notice to the district surveyor before commencing the works,—

Mr. W. Donaldson, solicitor, again supported the summons on behalf of his brother; and on this occasion Mr. Fladgate, the solicitor to the Commissioners of the Exhibition of 1862, attended for the defendant.

Mr. Fladgate said that he understood the case had stood over for the Metropolitan Board's approval of the plans. He had now received a formal approval of the plans from the Board, and a copy had been sent to the district surveyor.

Mr. Donaldson admitted the receipt of the plans, which were produced. He argued that the jurisdiction of the district surveyor was not superseded by the Board of Works, and that in every building, whether iron or otherwise, not specially mentioned by the Act as exempted, the district surveyor was entitled to receive the notice.

Mr. Fladgate, on the other hand, contended that in all buildings which were inapplicable to the rules of the Building Act they were bound to apply in the first instance to the Board for their approval of the plans.

The defendant said that, while the commissioners were in communication with the Board of Works, he sent a letter to the district surveyor apprising him of it, and telling him that he did not like to interfere with the two bodies.

Mr. Ingham thought that would amount to a notice.

The defendant said the letter was read on the former occasion. He also said that within ten hours after the letter was sent he received the summons.

Mr. Donaldson said the summons was obtained before the letter was received.

Mr. Alfred Williams, assistant to the complainant, was called as a witness, and stated that he first observed that the works had commenced a month ago last Monday. He called Mr. Donaldson's attention to them on the same day, and a letter was sent to Mr. Kelk, requiring a notice. They had no reply; and on the following Thursday, he (witness) was desired to obtain a summons, which was granted. On the following day Mr. Kelk's letter was received.

The defendant said the summons was served on Friday evening.

Mr. Ingham said they had no right to begin the works before giving two days' notice.

The defendant said he quite admitted a notice ought to to have been given.

Mr. Ingham said he should inflict a nominal penalty of 1s., and 2s. costs.

Mr. Donaldson applied for larger costs, as it was a question of some importance to the complainant.

Mr. Ingham ultimately allowed a guinea costs, which was immediately paid.

Books Received.

Collieries and Colliers: a Handbook of the Law and Leading Cases relating thereto. By J. C. FOWLER, Barrister-at-Law, &c. London: Longmans & Co. 1861.

THE great and growing interests involved in coal-mining seem to justify the publication of a work such as this, in which these interests alone are the subjects treated of. It is the first of its kind, so far as regards this exclusive devotion to mining interests; and is intended not so much for professional purposes as for the use of all concerned in collieries, to enable them, by easy reference, to steer clear of law-breakers, and to transact their business, enter into contracts between employer and employed &c., and be versant with what is right and wrong, legal and illegal, in respect to all such topics as truck, combination, intimidation, rating, inspection, &c.; without a perpetual recurrence to lawyers, and consequent outlay for professional advice. It is evidently a useful book.

VARIORUM.

"Ierne; or, Anecdotes and Incidents during a Life chiefly in Ireland; with Notices of People and Places. By a Retired Civil Engineer. London: Partridge & Co. 1861." This is a vivacious and rattling volume, full of sprightly Irish humour, and forms a pleasant companion for a leisure hour. The author has an engineering eye open to the merits of various localities, amongst those which he visits and describes. The volume is illustrated by engravings.——"Statistical Papers based on the Census of England and Wales, 1851; and relating to the Occupations of the People and the Increase of Population 1841-51. By F. A. Welton, F.S.S. London: printed for the Author by Savill & Edwards, Chandos-street, Covent Garden. 1860." When the new census returns are published by the Registrar-General, these papers on the census of 1851 will be extremely useful for comparison; and we may then have to recur to them as a more fitting time for detailed notice.——"Journal of the Bath and West of England Society for the Encouragement of Agriculture, Arts, Manufactures, and Commerce. 1861. London: Ridgway, Piccadilly. Part II., Vol. IX." The reports and papers in this volume are of an order chiefly useful, of course, to those engaged or otherwise interested in agriculture. Some of them, however, may be read by others with more or less interest or advantage. There is a short one on stable-fittings, and a more important one on the profits of small farms, by Mr. Darby, of Lytchett, in Dorset. Mr. W. B. Tegetmeir has one on poultry; and there are others on liquid manures, irrigation, embankment of marsh lands, &c.

Miscellanea.

SLIP ON THE METROPOLITAN RAILWAY. — A slip occurred a few days ago on that portion of the metropolitan underground railway which lies between Judd-street and Wilsted-street, but fortunately without injury to any one, and also without doing any damage to house property. The slip occurred in an open cutting in the road from kerb to kerb. We are not inclined to aid in raising an alarm as to the accident: it is not more than might be anticipated as probable in the construction of such a line as this.

BRUSSELS INDUSTRIAL EXHIBITION. — The Lords of the Committee of Privy Council on Education have received from the Secretary of State for Foreign Affairs a copy of a despatch from her Majesty's minister at Brussels, announcing the intention to hold an Exhibition of Industrial Arts in Brussels, under the direction of the Belgian Government. The Exhibition will be opened on the 1st of August, 1861, and will contain designs, models, and finished articles connected with industry, produced either by Belgians or foreigners. Among the productions are enumerated: — Architectural designs and models; designs for the exterior or interior decoration of buildings; for cornices, mouldings, chimney-pieces, balconies, &c.; for altars, pulpits, &c.; for furniture, paper hangings, inlaid floors, &c.; for stoves, grates, lamps, candelabra, gates, vases, inlaid work, glassware, and objects in marble and alabaster. The models may be made of wood, stone, wax, or other substance. There is a special competition for designs for furniture and decoration; and another for metal work.

FIRE-CLAY MANUFACTURES.—A paper on this subject was read recently by Mr. W. H. Stephenson, of Throckley, before the Society of Engineers. Fire-clay is found in Wales, Scotland, Stourbridge, Leeds, Dorset, Surrey, and Newcastle; but the paper, in the main, was confined to the nature, manufacture, and use of the Newcastle quality, as that with which the author is more intimately acquainted. The most valuable property of fire-clay is its plasticity, or the property of forming dough with water, sufficiently soft to take the most delicate impression from a mould, and so deficient in elasticity that even the slightest indentation is lasting and permanent. The most prominent physical properties of clay are its plasticity and behaviour when exposed to heat. Exposed to the most intense heat that can be artificially produced, clay refuses to become liquid, and acquires at most a slight degree of flexibility. Its particles then cohere so strongly together that the burnt mass is hard and sonorous, although still porous enough to absorb water with avidity. Fire-clay is commonly found in the coal measures, at a great depth from the surface, but not unfrequently it lies on the top. At Throckley it lies immediately below the coal measures, its thickness varying from 3ft. to 18in. As a rule, it is very strong and hard, and cannot be worked to advantage without gunpowder. When brought to the surface it is exposed to the atmosphere, and soon becomes comparatively plastic. Difference of opinion exists as to adopting this system, inasmuch as a very large capital is necessary, and it lies dormant for the time being. The clay is ground into a fine powder, preparatory to being moulded into bricks, gas-retorts, &c. With clay in good order, a skilled workman can mould from 2,000 to 2,500 marketable bricks in a day, for which he gets 2s. 6d. a thousand. The bricks are afterwards burnt; a kiln containing about 12,000 requiring about five days for the burning process; and during that time it consumes from twelve to fifteen tons of coals. The value of fire-bricks depends upon their fire-resisting qualities; and these, again, depend upon the proportion of silica they contain. The prices average from 40s. to 50s. per thousand in the Newcastle district.

SOUTH KENSINGTON MUSEUM.—During the Whitsun week there were 19,599 visitors; at the Social Science *conversazione*, Saturday evening, 976; total, 20,575.

CAMBRIDGE ARCHITECTURAL SOCIETY.—The excursion of the Cambridge Architectural Society took place on Monday, the 20th ult. A party of about seventeen started with coach and four, and drove over to Huntingdon, taking Long Stanton, Over, Swavesey, and Fen Stanton on the way. At Long Stanton they examined the church of St. Michael, and its larger neighbour of All Saints. At Swavesey the party were invited by Mrs. Long to view the old Manor-house. The church at Swavesey is in very poor condition. Fen Stanton has had the nave lately restored, but the chancel looks very meagre.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.—The fourth *conversazione* of the season was held last week in the Egyptian Hall, Mansion House, under the presidency of the Lord Mayor. The fine-art collection included numerous paintings of high order of excellence by modern artists, with specimens of sculpture by the first living masters. A considerable number of works of art had been lent for the occasion by private collectors, desirous of furthering the object of the institution. The Lord Mayor having opened the business, the hon. secretary (Mr. Ottley) read a paper explanatory of the origin, objects, and operations of the Society. A vocal and instrumental concert followed, under the conduct of Mr. Jules Benedict and Mr. Alfred Gilbert.

TENDERS FOR PAVING AT HERTFORD.—At a recent meeting of the Hertford Paving and Lighting Commission, the following tender from Messrs. Ekins & Sons, being the lowest sent in, was accepted, and the whole of the work required to be finished to the satisfaction of the surveyor (Mr. Wilds), by the end of September next: 2½-inch tooled York paving, in mortar, at 9¾d. per foot; old paving taken up, squared, and relaid, at 3d. per foot; new Aberdeen granite curb, 12 inches by 6 inches, at 1s. 10d. per foot; old ditto, reset, at 4d. per foot; new West of England ditto, at 1s. 9d. per foot; new York curb, 9 inches by 6 inches, at 1s. 4d. per foot run; new large granite pebble paving, 1s. 3d. per foot; ditto, laid in concrete, 1s. 4d. per foot; ditto new small pebble, laid in concrete, 1s. 3d. per foot.

NEWSVENDORS' BENEVOLENT INSTITUTION.—The annual meeting of the members of this institution was held on the 24th ult., at Freemasons' Tavern. Mr. Terry presided, and the attendance was good. The report stated that the subscriptions for the year had been 46*l.* 9s. 6d. This was an increase of 7*l.* 0s. 6d. on the previous year. The donations had been 38*l.* 9s. 8d.; and, after meeting the necessary expenses, a balance of 38*l.* 9s. 8d. remained in the hands of the treasurer. The committee regretted that their funds would not allow them to increase the number of pensioners. It was also a matter of regret that, as the subscription was only 5s. per annum, a larger number of the trade had not joined the institution. The report was adopted. After the business had been concluded, the company assembled in the great hall to celebrate the annual festival in connection with the institution. Covers were laid for 160. Mr. Charles Dickens was to have presided, but illness prevented his attendance, and his place was occupied by Mr. Wilkie Collins. The subscriptions amounted to almost 100*l.*

ARTISTIC CONGRESS AT ANTWERP.—An Artistic Congress will be held at Antwerp, on the 19th and 20th August next, in the Council-room of the Cercle Artistique Littéraire et Scientifique, to which artists and literary men of all nations are invited. The programme of proceedings indicates the consideration of such questions as that of the establishment of an international legislation for the full suppression of the piracy of works of art. There are also questions of artistic interests, comprising the following:—1st, Is the expression of monumental art in harmony with the manifestations of modern ideas?—2nd, Is not the union of architecture, sculpture, and painting indispensable to monumental art? What reforms should be introduced into the mode of instruction in the fine arts in order to establish that union?—3rd, Is it not in the union of architecture, painting, and sculpture, that monumental art should find the elements of a new style which ought to characterize our epoch? Amongst questions of philosophical interests to be discussed one is, "What affinity exists between philosophy and art?" and another, "Does not art exert a certain influence upon the intellectual and moral development of nations?"

GOVERNMENT TURKISH BATHS.—It is rumoured that Government intends to erect Turkish baths at Aldershott for the use of the camp.

CHATHAM.—The enlargement of Chatham dockyard, which the Government has determined on carrying out, will involve the expenditure of nearly 1,000,000*l.* sterling. On the channel side of St. Mary's Island three large steam-basins will be constructed, each connected with the other by locks. The largest of these basins will cover an area of 30½ acres, with a length of 1,850 feet on its least side, and a breadth of 700 feet, with a depth of 30 feet at neap tides. The river Medway, for some distance below the dockyard, will also be deepened to form a channel 600 feet wide and 27 feet deep at half-tide, which will give 31 feet at neaps and 35 feet at springs, so as to enable large line-of-battle ships to ascend the river to Chatham dockyard.

SEWERAGE AND THE PRUSSIAN GOVERNMENT.—A commission from the Prussian government having visited England during the year 1860, to inspect the sewerage works of the metropolis and other English towns, went over, amongst others, Carlisle and West Ham. Mr. R. Rawlinson, having afforded assistance and so facilitated the attainment of the object of the journey, has received a letter signed "Bernstorff," presenting in the name of His Prussian Majesty's Government a copy of the work on the church of St. Sophia at Constantinople as an acknowledgment of the assistance afforded, showing a satisfactory appreciation of the services rendered. We may suppose that the Prussian government have some idea of moving in sewerage and drainage works.

SALES AT THE MART, MAY 23.—By Messrs. Morris & Son.—A ground-rent held under lease for 92 years, from Midsummer, 1845, on No. 2, Howley-place, Maida-hill West, Paddington, of 15*l.* per annum—sold for 300*l.* A ground-rent secured upon No. 3, Howley-place, of 15*l.* per annum—sold for 295*l.* A ground-rent secured upon No. 4, Howley-place, of 15*l.* per annum—sold for 290*l.* A ground-rent secured upon No. 10, Howley-place, of 15*l.* per annum—sold for 300*l.* At Garraway's.—By Messrs. Farebrother, Clark, & Lye.—A plot of freehold building land, situate at Clapham-rise, having a frontage of 58 feet, to Paradise-road, by a depth of 110 feet.—sold for 230*l.* A plot of freehold building land, situate at Clapham-rise, having a frontage of 58 feet, to Paradise-road, by a depth of 110 feet. sold for 235*l.* A plot of freehold building land, having a frontage of 50 feet to Lark-hall-lane, by a depth of 109 feet and 105 feet 6 inches—sold for 260*l.* A plot of freehold building land, with a frontage of 73 feet, to Lark-hall-lane, and 100 feet to Jeffrey's-road—sold for 500*l.* A plot of freehold building land, with a frontage of 78 feet by 183 feet 2 inches, to Jeffrey's-road and Little Paradise-place—sold for 675*l.* A plot of freehold building land, on the west side of Jeffrey's-road, with a frontage of 155 feet 6 inches by 185 feet 10 inches—sold for 1,360*l.* A plot of freehold building land, with a frontage of 135 feet 10 inches, to the Clapham-road—sold for 1,170*l.*

RAILWAY STATISTICS.—Mr. Cleghorn, of York, the secretary to the North-Eastern Railway Company, has prepared a summary of railway statistics, for 1859, according to which, as appears from the *York Herald*, the capital authorized on 31st December, 1859, was—share, 285,484,181*l.*; loan, 98,282,170*l.*: total, 383,716,351*l.* The capital paid up at that date was—1. Share, ordinary, 184,560,019*l.*; preference, 63,555,179*l.*,—248,115,198*l.*: 2. Loan, debentures, 80,628,116*l.*; debenture stock, 5,619,614*l.*—86,247,730*l.*; total capital paid up, 334,362,928*l.* The length of line open for traffic was 10,002 miles, with 1,020 in course of construction. The total number of persons employed on 30th June, 1860, on lines open, was 127,450, and on those in course of construction, 53,923. The total number of stations was 3,601. The number of passengers conveyed of all classes was 149,757,294, exclusive of 49,856 periodical ticket-holders. The miles travelled by these passengers amounted to 2,018,767,803, giving an average of 13½ miles per passenger. The receipts from passengers were 11,118,579*l.*, or an average of 1s. 6d. per passenger. The total receipts from passengers, luggage, &c., and mails, was 12,537,493*l.* The weight of general merchandize conveyed was 27,005,737 tons, and the receipts 8,373,283*l.* 12,805,613 head of live-stock had been carried, receipts 609,722*l.* The total receipts from all sources amounted to 25,743,502*l.* The number of trains run was—passenger, 2,233,696; goods, &c., 1,361,152; total, 3,594,848. The average receipts per passenger-train were 5*l.* 12s. 3d.; per goods' train (including minerals and cattle), 9*l.* 14s. 2d.

THE ART-EXHIBITION OF 1861, AT DUBLIN. This exhibition has been inaugurated by the Lord Lieutenant of Ireland, in the large hall in front of the Royal Dublin Society's House. The hall has been furnished with pictures and statuary for the occasion, and the organ built for the Paris Exposition of 1855 gives zest to the whole. The building contains double the number of pictures exhibited in 1853.

THE ROMAN CATHOLIC CHURCH, CRAWLEY.—Sir: Under the head "Crawley," in your Church news of last week, particulars were given of some buildings erecting for the Roman Catholics there, which require some notice. It is right you should know that Mr. Benjamin Ferrey was called upon last week to survey these buildings; it being reported that the chapel was in a dangerous state, and that the roof of the chapel must be strengthened considerably, additional buttresses built in the halls, &c. The buildings are a reproach to the nineteenth century, and have not the slightest pretensions to architectural propriety. The monastery, as it is called, is like a range of common stabling.—A. B.

BIRMINGHAM ARCHÆOLOGICAL ASSOCIATION.—The annual meeting of the Birmingham and Midland Counties Archæological Association was held in the lecture theatre of the Midland Institute. The report, read by Mr. Harris, honorary secretary, recorded the fact that two excursions were made during the past year; and that, owing to the unfavourable weather, they resulted in a loss to the society. The accounts showed receipts, 75*l.* 17s. 6d., and outstanding subscriptions, 21*l.* 17s. 6d. After the report and accounts had been adopted, a vote of thanks was passed to Sir F. Scott, Bart., for his services as president during the past year, and he was re-elected to that office. The vice-presidents, Lord Lyttelton, Sir J. Pakington, Sir E. A. H. Lechmere, Bart., Sir T. Winnington, Bart., Messrs. C. H. Bracebridge, J. T. Chance, T. C. S. Kynnersley, C. W. Hoskyns, and T. H. Galton were also re-elected. Professor Chamberlain and Mr. C. E. Mathews were elected secretaries, and the latter gentleman was also chosen treasurer. Other gentlemen were appointed on the committee. The next excursion will probably be made to Stratford-upon-Avon, in the early part of June.

COMMISSIONERS FOR THE EXHIBITION OF 1851. The fourth report of the Commissioners, dated the 3rd ultimo, says:—"Out of the total extent of land originally purchased by us in 1852, amounting to 85 or 86 acres, the various appropriations that have already been made for the purposes of the Department of Science and Art, the construction of roads, the Horticultural Gardens, the Exhibitions of 1862 and 1872, and the erection of private houses, have absorbed more or less permanently not less than 70 acres, so that only 14 or 15 acres, or about one-sixth of the land forming the Kensington-gore estate, remain at present unappropriated to the development of the purposes contemplated by our charter; and even four acres of that amount have been temporarily lent for the Exhibition of 1862." A further report from the Commissioners brings the account of their proceedings down to the present time, when the gardens of the Royal Horticultural Society are on the eve of opening, and the second Great Exhibition building is begun. To the Horticultural Society the Commissioners have let 22 acres of the land purchased by them at South Kensington, the centre of the estate, forming an ornamental interior court to any buildings which may be hereafter erected along the fine open roads that have been constructed round the main square or heart of the property. The receipts from the gardens, after paying current expenses and interest on the money borrowed by the society for the formation of the gardens, and by the Commissioners for the erection of arcades to enclose them, are to be divided equally between the Society and the Commissioners; in other words, the rent to be half the profits. In these new gardens is to be erected the memorial of the Great Exhibition of 1851, towards the cost of which the sum of 6,000*l.* has been provided by public subscription. The report contains also the official documents relating to the second Great Exhibition of 1862. The land for it is granted by the Commissioners of 1851 rent free; and of the part of the building which is to be of a permanent character these Commissioners are willing to grant to the Society of Arts a long lease at a moderate ground rent, on condition of the building being used solely for holding exhibitions and for purposes connected with the promotion of arts and manufactures.

VEGETABLE GLUE.—Common animal glue is likely soon to be superseded by paste made of gluten. It looks like glue, and is quite as strong. Gluten, which is to be had at all starch manufacturers, will dissolve in twice its weight of cold water, and may be used in a cold state. A kilograme of this vegetable glue will yield three when dissolved, whereas one of animal glue does not yield more than two.—*Galignani.*

GRAND SURREY DOCK COMPANY AND THEIR WORKMEN.—We understand that the workmen of the Grand Surrey Dock Company have recently addressed a letter to their employers, requesting an abridgement of time and earlier payment on Saturday afternoons. The boon has been very wisely granted to the men who are casually employed at this establishment, and the result is highly favourable to their wives, who are thereby enabled to obtain choicer commodities in the market than under the old system. The men are now about to thank their employers for this concession.—*Orr's Kentish Journal.*

THE BUILDING TRADE IN LONDON.—On Tuesday evening a very numerous meeting of workmen in the different branches of the building trade took place at the Surrey Theatre, convened by the delegates of the trades, to ascertain whether the men were still disposed to persist in their determination to oppose the hourly system of payment, as enforced by a few of the master builders. The chair was taken by Mr. Franklin, who opened the business by expressing his sympathy with all working men. Mr. Potter gave a history of the dispute from its origin to the present time. Mr. Allcroft (carpenter) moved the first resolution:—"That in the opinion of this meeting the system of payment by the hour is pernicious in its influence, because it destroys a maximum day, leaving the workman to the mercy of his employer, by cutting off all the privileges he has hitherto enjoyed." Mr. Wheeler (plasterer) seconded the resolution. Mr. Quilter (painter) moved, and Mr. Davy (carpenter) seconded, the following resolution:—"That the thanks of this meeting be given to those who have so liberally contributed towards the support of our fellow-workmen who have so nobly stood out against the system of payment by the hour, and this meeting further pledges itself to render them every support until the hour system is withdrawn;" which was supported by Mr. Finlon, French polisher, and carried unanimously. The meeting separated with a vote of thanks to the chairman.

INCREASE OF THE POST-OFFICE.—In 1758, the gross receipts of the Post-office amounted to 222,075*l.*: the charges paid were 148,345*l.*; and the revenue or profit was 73,730*l.* In 1859, the gross receipts amounted to 3,299,825*l.*, the cost of management was 1,853,953*l.*, and the net revenue amounted to 1,445,872*l.* From this latter sum must be deducted the cost of the packet service, which was last year charged to the Admiralty, and then amounted to 1,069,778*l.* The enormous growth of our foreign and colonial commerce is well shown by means of the public accounts of the cost of packet service. We find, in the Post-office accounts for the year 1686-7, that the charges paid for packets that year were 916*l.* at Harwich, and 539*l.* 12*s.* at Dover. During the current year (1861) the Post-office will have to pay nearly 19,000*l.* for the Dover service alone, and 238,500*l.* for carrying the mails to and from the West Indies; while the entire packet service of the year is estimated to cost no less than 994,956*l.* The Money-order Office, which was established as a recognized branch of the Post-office in December, 1838, has developed itself in so marvellous a manner as to make all comparison out of the Post-office itself almost impossible. In the first year of its official existence this department transacted business to the extent of 624,851*l.*, the number of these transactions being 377,536. Such was the rapid increase of this Office, that the year 1850 showed 8,870,498 transactions, amounting to the immense sum of 16,977,563*l.* Transactions of this magnitude cannot be comprehended without some difficulty, and it becomes a matter of wonder how a department like the Post-office, having so much to do in what may be called its legitimate business, can carry on a gigantic banking business like that of the Money-order Office, under any circumstances; but the wonder becomes greater, when we find that, although, in 1859, there were 13,936,637 transactions, amounting to 26,536,390*l.*, and that, from 1841 to 1860, the total number of transactions had reached 184,150,225, and the amount of money 355,701,779*l.*, yet the losses sustained have only amounted to the comparatively insignificant sum of 5,965*l.*—*St. James's Magazine.*

HARBORNE SCHOOL COMPETITION.—The architectural competition for the new schools and school house, in connection with St. John's Church, Harborne, has been decided in favour of Mr. Naden.

LIQUID GLUE.—The following recipe is given by the *New York Tribune* for making the liquid glue, now so popular in America:—In a wide-mouthed bottle dissolve eight ounces of best glue in a half-pint of water, by setting it in a vessel of water, and heating it till dissolved. Then add slowly, constantly stirring, two and a half ounces of strong aquafortis (nitric acid). Keep it well corked, and it will be ready for use. It is a handy and valuable composition, as it does not gelatinise, nor undergo putrefaction and fermentation and become offensive, and is always ready for use.

"NOTES ON ART."—Sir,—Can you find me a corner to explain that, while sensible of the claims to public notice you assign to my pamphlet, by comparing parts of it to "a dissertation on the texts given in last report of the Art-Union of London," it was actually printed prior to the date of that report; and, as a dissertation is commonly understood as a something founded on and following a previous statement of fact or principle, I am most anxious to free myself from any imputation of plagiarism which may thereby mistakenly arise.—The AUTHOR of "Notes on Art: our Public Monuments."

CLUBS FOR WORKING MEN.—Vice-Chancellor Sir William Page Wood presided on Friday night, the 24th ultimo, at the Clare Market Club, founded by the Rev. C. M. Robins. The meeting was held at the Colonnade in Clare Market, for the purpose of advancing the interests of the Working Men's Club recently formed there, and of getting up similar institutions. The Rev. Mr. Robins, the originator, reported that there were now 70 members. For twopence per week a working man could spend his evenings at the Club, and improve his mind. Lectures were given, and the Bishop of Oxford had kindly promised one.

THE SOCIETY FOR THE PROMOTION OF SOCIAL SCIENCE.—A numerously attended *conversazione*, under the auspices of the Committee of the Association for the Promotion of Social Science, was held on Saturday evening at the South Kensington Museum. The company numbered nearly 1,000. The art galleries, the education museum, the food collection, and the animal products museum were thrown open for the inspection of the assembly. The band of the 1st Middlesex Engineer Volunteers was present, and played several appropriate airs during the evening. The meeting for the current year will be held at Dublin, from the 14th to the 21st of August.

NEW WATER WORKS FOR HOBART TOWN, TASMANIA.—The foundation-stone of the tower connected with the new water works for Hobart Town was laid with great formality and ceremonial, by the Governor, Sir H. E. F. Young, on 6th March last. The mayor, in an address to the Governor, stated the following particulars as to the works. The distance of the main reservoir from Hobart Town is about two and a half miles from St. David's Church. The ground covered by it is seven acres: the sources of supply are various springs, chiefly forming the sources of supply of the Brown's River; and the height of the reservoir above the level of the sea is 440 feet. The quantity of water which the reservoir is calculated to contain is 40 millions of gallons; and the daily consumption of the town is between 500,000 and 600,000 gallons. The quantity of water in store may be increased by the construction of additional reservoirs. The council, added the mayor in conclusion, are assured that your Excellency will feel, with them, the highest gratification, that very soon the health, comfort, and cleanliness of Hobart Town and its vicinity will have been secured, by placing at the absolute disposal of the inhabitants a super-abundant supply of pure and wholesome water for a nominal outlay; an element which Providence has bountifully placed within their reach for their use, health, and convenience, and for which benefit the whole population must feel themselves humbly and truly thankful. Mr. J. N. Gale is the engineer of the works. At a *déjeûner* afterwards given, on the Governor's health being drunk, Dr. Hall addressed the meeting; and, amid other topics, adverted to the question of sewerage, to his (Dr. Hall's) labours with reference to the subject, and the satisfactory state of the public health in consequence of the cleansing showers of the last three months. He also touched upon the question of public fountains, in connection with the projected monument to the late Sir John Franklin, who had taken an interest in vital statistics, when governor of this Colony.

VALUE OF A NEW FIXED DYE.—Ten thousand pounds is said to be the sum offered by a Manchester manufacturer to Mr. Crace Calvert for a new dye that shall stand the sun.

HIGHBURY BARN.—Sir: in your impression of the 25th May, you kindly referred to my practical knowledge as foreman of carpenters in carrying out the difficult piece of work at the above place, without stating my name, which you, doubtless, were not in possession of. By inserting this in your valuable journal, you will oblige,—A. H. SMITH.

TENDERS

For Ludlow Sewers, Deodorising Tanks, Cattle Market, and Waterworks Extension. Mr. T. Curley, engineer. Quantities supplied:—

Climie	£9,181 0 0
Holmes	8,617 0 0
Craven & Treasure	8,162 0 0
Clifford	8,120 0 0
Edmunds	7,820 0 0
Clarke	7,697 0 0
Moore	7,535 0 0
Mariott	7,524 0 0
Clarke	7,355 0 0
Brassey & Field	7,321 0 0
Pearson & Son	7,028 0 0

For Extension of Maltings, Leamington Brewery. Mr. R. Davison, architect. Quantities by Mr. R. L. Curtis:—

Clarke & Son	£4,861 0 0
Hart	4,822 18 0
Ballard	4,516 8 8
Gascoign	4,512 0 0
Marriott (accepted)	4,426 0 0

For St. Mary's College, Harlow. Mr. Withers, architect. Quantities supplied by Mr. Poland:—

Macey	£3,884 0 0
Sanders, Brothers	3,581 0 0
Mansfield & Son	3,439 0 0
Holland & Hanen	3,416 0 0
Perry	3,070 0 0

For building Three Houses and Shops and a Pair of Semi-detached Cottages, at Brixton-hill, for Mr. Kelly. Mr. Barrett, architect:—

Thompson	£2,428 0 0
Cole	2,039 0 0
Tarrent	1,994 0 0
Glenn	1,960 0 0
Brake	1,927 0 0
Smith	1,920 0 0
Turner	1,898 0 0
Wallis	1,600 0 0

For Works for Mr. Bevington, at Roupell-park, Brixton. Mr. John Taylor, Jun., architect. Quantities by Mr. Reddall:—

Lawrence, Brothers	£2,047 0 0
Clements	1,935 0 0
Pritchard & Shelton	1,932 0 0
Scott	1,758 3 0
Smith	1,749 0 0
Downs	1,745 0 0
Thompson	1,742 0 0
Deacon	1,741 0 0

For taking down Workshop, &c., and building on the site Two Houses and Shops, at Church-hill, Woolwich, for Mr. Francis H. Bannister. The contractor to be allowed to take the whole of the materials of present structure, and to use such bricks only as approved by the architects. Messrs. W. Gosling & Son, architects, &c.:—

Vaughan	£490 0 0
Thompson	480 0 0
Champien	475 0 0
Taylor	469 6 0
Sonnex	466 0 0
Lidbetter (accepted)	459 0 0

For a New School-room and Class-room, at the Grammar School, Reigate. Mr. Geo. E. Pym, architect, Reigate:—

	Building.	Fittings.	Total.
Nightingale	£665 10	£74 0 6	£739 10 6
Camber (not signed)	661 10	..	..
Carruthers	649 0	82 2 0	731 2 0
Holdsworth	585 0	74 0 0	659 0 0
Wesley	549 0	77 1 11	626 1 11
Thornton (accepted)	554 0	64 0 0	618 0 0

For Sheds and Works for the Grand Surrey Canal Company:—

Holland	£4,244 0 0
Aird	4,025 0 0
Downs	3,870 0 0
Perry (accepted)	3,794 0 0

For alterations and additions to Premises, Nos. 1, 2, and 3, Copthall-court, City, for Mr. T. Hendrey:—

Duncan	£1,480 0 0
Harrison	1,357 0 0
Shaw & Piper	1,340 0 0
Devereux & Son	1,320 0 0
Tracey	1,238 0 0
Davis	1,098 0 0
Hewett	1,080 0 0
Cubitt	958 0 0

For partly taking down, rebuilding, and altering Shop and Warehouses, at Atherstone. Mr. Robert Jennings, architect, Atherstone:—

Spencer	£1,242 0 0
Fox & Brother	991 10 0

For erecting a cottage, at Fleetpond, Hants., for Mr. D. McNab. Mr. J. Swan, architect:—

Poole	£613 0 0
Martin (accepted)	500 0 0